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NEW REMEDIES.

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MATERIA MEDICA, PHARMACY, AND THERAPEUTICS.

FLUID EXTRACTS BY REPERCOLATION.*

BY EDWARD R. SQUIBB, M.D.

IN the *American Journal of Pharmacy* for May, 1878,† the writer published an article under the above title, which for want of time was incomplete. It was reprinted from the journal in pamphlet ‡ form, with some additions and corrections, and with some of the tables and other details completed; but still the subject and the original design of the writer were left incomplete for want of a table of the details of practice by repercolation which could be supplied from the writer's experience with a large number of fluid extracts in common use during the twelve years embraced by the paper.

As their details embrace the fineness of powders, the menstrua used, the tension of packing, and the weight of the finished fluid extracts; and as these details had furnished throughout a number of years a series of the most important fluid extracts, many thousands of pounds of which had been successfully used by the medical profession throughout the United States; and as the writer had no objection to publishing the results of his experience and labor for the general good of pharmacy and medicine; it was thought to be worth while to complete the paper referred to and offer it to the Association, for the benefit of whose Committee on Revision of the Pharmacopœia the work was originally undertaken. The Association may now, at its pleasure, place the whole or any part of the now completed paper on its records in the Proceedings.

In the following table, the first column gives the drugs repercolated. The second column gives the fineness of powders used, the number indicating the number of the sieve through which all the powder would pass, coarse and fine together. And number of sieve indicates the number of meshes to the linear inch. For example, No. 20 gives a mesh $\frac{1}{20}$ of an inch square less the diameter of the wire, leaving the opening to be, say, $\frac{1}{30}$ of an inch. In these cases two numbers are given to indicate that the difference between the coarser and finer particles is much greater than common; the first number indicates the sieve through which the whole would pass; the second, that through which the finest portion would pass. In the two articles of Cotton-Root Bark and Stillingia, the "C. C." of the table means cut and crushed or torn into short shreds.

The third column gives the menstrua used. All these give good efficient fluid extracts, but they are not all the best that could be devised through proper research. Many are the result of frequent trials and changes, and many are used in deference to pharmacopœial authority where they are necessary to obtain pharmacopœial results. But where pharmacopœial results are not reached by menstrua directed, and where they are better reached by different menstrua, those directed by the Pharmacopœia are not used. It is very doubtful whether all those which consist of "stronger alcohol," or alcohol would not be better if alcohol of lower strength was used. The many and great advantages of weak menstrua render a thorough investigation of this point important before the next formulas are adopted. The "str. alcohol" of the table is the U. S. P. officinal s. g. .817. The "alcohol" is the U. S. P. officinal s. g. .835. The "dil. alcohol" is the U. S. P. officinal, s. g. .941. The "glycerin" is the U. S. P. officinal s. g. 1.25. The "acetic acid" is the U. S. P. officinal 36% s. g. 1.047. And the water of ammonia is the U. S. P. officinal 10% s. g. .960.

All the menstrua are made by weight, and not by measure.

The fifth column gives the proportion of menstruum or of weak percolate which has been found best to moisten the powder properly before sifting and packing.

For example, the officinal portion of 16 troy ounces of aconite root takes by the table 6 troy ounces of menstruum or of weak percolate to moisten it properly before sifting to pack.

The sixth column indicates approximately the pressure to be used in packing the moistened and sifted powder. To make the terms used in the table a little more definite, the following definitions may be useful. "Loosely" means that the moistened powder is put in layer by layer, and uniformly distributed with the least

* Paper read at the meeting of the American Pharmaceutical Association, held at Atlanta, November 26th to 29th, 1878. As the nature of the contents did not permit an abstract, and as it is highly desirable to place the same before the profession and particularly the Committee on the Revision of the U. S. P. as early as possible, we have decided to publish it in extenso.

† See also an abstract in NEW REMEDIES for June, 1878.

‡ This pamphlet will be sent free of expense to any address by simply asking the writer for it.

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FLUID EXTRACTS BY REPERCOLATION. TABLE OF DETAILS.

Drug Repercolated.	Fineness of Powd. Sieve No.	Menstruum.	Weight in grains of 1 pint of menstruum at 25° C. = 77° F.	Parts of Menstr. or of weak percolate to moist. 16 parts of powder.	How Packed.	Weight in grains of a pint of finished Fl. Extract at C. 25° = 77° F.	
						Maxim.	Minim.
Aconite Root	80	Alcohol	6023	6	Moderately	6843	6620
Arnica Root	20	Dil. Alcohol	6848	16	Hard	7460	7170
Aromatic Powder	20	Str. Alcohol.....2 parts Water.....1 part	6447	6	Firmly	7000	6853
Asarum	20	Dil. Alcohol	6848	8	Firmly	7475	7290
Belladonna Leaf	80	Str. Alcohol.....2 parts Water.....1 part	6447	7	Firmly	7425	7030
Belladonna Root	80	Str. Alcohol.....2 parts Water.....1 part	6447	5	Firmly	7532	7150
Bittersweet	80	Dil. Alcohol	6848	10	Firmly	7650	7362
Buchu	80	Str. Alcohol	5908	7	Hard	6610	6300
Buckthorn Bark	20	Str. Alcohol..... 4 parts Water.....15 parts	7003	12	Hard	7764	7530
Butternut Bark	80	Dil. Alcohol	6848	10	Moderately	7510	7265
Cannabis Indica	8	Str. Alcohol	5908	6	Hard	6431	6264
Capsicum	20	Str. Alcohol	5908	5	Hard	6477	6330
Cardamom Compound	20	Str. Alcohol.....2 parts Water.....1 part	6447	6	Hard	6890	6710
Cimicifuga	20	Alcohol	6023	5	Moderately	6998	6650
Cinchona, Yellow	40	Alcohol .....3 parts Glycerin.....1 part	6632	8	Firmly	7690	7410
Cinchona, Yellow, Comp.	40	Alcohol.....3 parts Glycerin.....1 part	6632	8	Firmly	7690	7425
Cinchona, Red	40	Alcohol.....3 parts Glycerin.....1 part	6632	8	Firmly	7692	7415
Cinchona, Red, Comp.	40	Alcohol .....3 parts Glycerin.....1 part	6632	10	Firmly	7588	7430
Colchicum Seed	30	Str. Alcohol.....2 parts Water.....1 part	6447	6	Hard	7320	6840
Coca Leaf	20	Str. Alcohol.....1 part Water.....2 parts	6943	11	Hard	7823	7590
Columbo	4–12	Dil. Alcohol	6848	7	Loosely	7313	7120
Conium Seed	20	Dil. Alcohol.....865 parts Acetic Acid..... 1 part	6847	7	Moderately	7690	7390
Cotton-Root Bark	c.c.	Str. Alcohol.....2 parts Glycerin.....1 part Water.....1 part	6960	6	Hard	7887	7625
Cubeb	20	Str. Alcohol	5908	Dry	Hard	6604	6288
Cypripedum	20	Dil. Alcohol	6848	8	Hard	7690	7415
Dandelion Root	20	Dil. Alcohol	6848	5	Firmly	7880	7650
Digitalis	80	Alcohol	6023	6	Firmly	7026	6650
Ergot	30	Dil. Alcohol.....865 parts Acetic Acid..... 1 part	6847	3	Firmly	7462	7400
Eucalyptus	20	Str. Alcohol	5908	10	Firmly	6980	6980
Gelsemium	80	Dilute Alcohol	6848	6	Firmly	7443	7235
Gentian	20	Dilute Alcohol	6848	7	Hard	8273	7810
Gentian Comp.	20	Dilute Alcohol	6848	12	Moderately	7991	7738
Ginger	20	Str. Alcohol	5908	4	Hard	6273	6100
Guarana	50	Dil. Alcohol	6848	5	Firmly	7625	7550
Hydrastis	20	Dil. Alcohol	6848	5	Hard	7763	7434
Hyoscyamus	80	Str. Alcohol.....2 parts Water.....1 part	6447	7	Firmly	7411	6993
Ipecacuanha	80	Alcohol	6023	7	Moderately	7130	6970
Juniper	8	Dil. Alcohol	6848	Dry	Hard	8304	8105
Lactucarium	12	Dil. Alcohol	6848	Dry	Moderately	7576	7543
Leptandra	20	Str. Alcohol.....2 parts Water.....1 part	6447	8	Hard	7585	7290
Licorice Root	6–50	Str. Alcohol..... 2 parts Glycerin.....1 part Water.....7 parts	7237	9	Hard	8573	8240
Lupulin	60	Str. Alcohol	5908	6	Loosely	7430	7254
Nux Vomica	12	Str. Alcohol	5908	11	Hard	6290	6170
Pareira Brava	80	Str. Alcohol..... .2 parts Glycerin.....3 parts Water.....5 parts	7537	9	Moderately	8178	7770
Pilocarpus	20	Str. Alcohol.....1 part Water.....2 parts	6943	8	Moderately	7576	7543

FLUID EXTRACTS BY REPERCOLATION. TABLE OF DETAILS.

Drug Repercolated.	Fineness of Powd. Sieve No.	Menstruum.	Weight in grains of 1 pint of menstruum at 25° C.= 77° F.	Parts of Menstr. or of weak percolate to moist. 16 parts of powder.	How Packed.	Weight in grains of a pint of finished Fl. Extract at C. 25° = 77° F.	
						Maxim	Minim.
Pleurisy Root	20	Dil. Alcohol	6848	8	Firmly	7672	7301
Podophyllum	20	Str. Alcohol	5908	6	Hard	6370	6300
Prickly Ash Bark (North.)	20	Dil. Alcohol	6848	5	Hard	7323	7178
Prickly Ash Bark (South.)	20	Dil. Alcohol	6848	5	Hard	7310	7170
Quassia	8	Dil. Alcohol.....2 parts Water.....1 part	6990	10		7215	7074
Rhatany	80	Alcohol.....28 parts Glycerin.....16 parts Water.....21 parts	7137	8	Moderately	8398	8100
Rhubarb	20	Alcohol.....3 parts Glycerin.....1 part	6632	8	Firmly	8315	7783
Sanguinaria	20	Dil. Alcohol.....865 parts Acetic Acid.....1 part	6847	8	Moderately	7883	7600
Sarsaparilla	6–30	Str. Alcohol.....1 part Glycerin.....1 part Water.....3 parts	7447	10	Moderately	8090	7750
Sarsaparilla Co.	6–30	Str. Alcohol.....1 part Glycerin.....1 part Water.....3 parts	7447	10	Moderately	8155	7847
Skullcap	4–20	Dil. Alcohol	6848	10	Hard	7774	7240
Senega	20	Str. Alcohol.....800 parts Aqua Ammonia.....1 part Water.....400 parts	6432	4	Firmly	7697	7466
Senna	20	Dilute Alcohol	6848	6	Hard	7750	7593
Senna Compound	20	Dilute Alcohol	6848	10	Firmly	7750	7495
Serpentaria	80	Dilute Alcohol	6848	11	Hard	7300	7100
Spigelia	20	Dilute Alcohol	6848	15	Firmly	7695	7542
Spigelia and Senna	20	Dilute Alcohol	6848	8	Firmly	7883	7570
Squill	Entire	Dilute Alcohol	6848	12	Loosely	9307	8685
Stillingia	c.c.	Dilute Alcohol	6848	7	Hard	7420	7163
Stramonium Seed	20	Str. Alcohol	5908	4	Hard	6255	6090
Uva Ursi	20	Str. Alcohol.....2 parts Glycerin.....3 parts Water.....5 parts	7537	8	Loosely	8774	8419
Valerian	20	Str. Alcohol	5908	4	Hard	6470	6243
Veratrum Viride	20	Alcohol	6023	6	Firmly	6990	6635
Wild Cherry Bark	20	Str. Alcohol.....58 parts Glycerin.....100 parts Water.....160 parts	7615	7	Firmly	8386	8020

pressure upon each layer that will secure entire uniformity throughout, the slight pressure increasing toward the last or upper layer. "Moderately" is intended to indicate a pressure upon each layer that would be about equal to 45 pounds, if both hands be pressed upon a scale. "Firmly" is to indicate a pressure of about 60 pounds; and "hard" means 75 pounds or more.

The last heading of the table, consisting of two columns, gives the maximum and minimum weights of the pint of finished fluid extract through an experience of many years of actual practice.

The difference between the maximum and minimum—the menstruum and other conditions being equal, and the exhaustions complete—indicates approximately the quality of the drug used. The average experience of the last three or four years, from greater knowledge, pains, and care in selecting, and better facilities for obtaining good materials, give results which are considerably above the mean of the extreme weights as given in the table, and approximate much more nearly to the maximum weights. Hence this maximum column may be received as the fairest and clearest expression of the practice at the present time. It should not, however, be forgotten for a moment that the weight or specific gravity of a fluid extract is not by itself any evidence either of the quality of the preparation or of the drug from which it is made. Nor even if the menstruum be accurately known, is the difference between the specific gravity of the menstruum and that of the finished fluid extract an accurate measure either of the quality of the drug used or the completeness of the exhaustion, for it may be very easily seen by a close scrutiny of the tables given in the first part of this paper, that in repercolation the amount of solid matters dissolved out of any drug by a properly adjusted menstruum does not increase arithmetically with each repercolation, although the active and

desirable portions generally do increase arithmetically or nearly so. That is, the weak percolates are none of them as medicinally strong as they seem to be if judged by appearance and by specific gravity, or, in other words, the weak percolate is a better solvent for the active principles of a new portion of the same drug than is the new menstruum, even though the specific gravities of the two are greatly different.

BROOKLYN, Nov. 23, 1878.

On the Preparation of single regular Crystals of any desired Size.

MR. FERDINAND MEYER, who has for thirty years studied the conditions necessary for obtaining large single and regular crystals of chemical salts, has published his method in the *Archiv der Pharmacie* (Oct., 1878), from which we take the following:

Prepare a solution of any salt in water of such a strength that, after standing twenty-four hours, a portion of the salt will separate in crystals. Pour off the motherwater, select a few of the best-formed crystals, and place them on a plate of glass, which lies in a rather tall vessel. Then redissolve a little of the dry salt in a small quantity of the motherwater, add this supersaturated solution to the main bulk of the motherwater, pour this upon the crystals on the plate of the glass, and place the vessel into a room where the temperature remains as uniform as possible, best in the cellar. The temperature of the room should be ascertained by a thermometer, and in case of any changes of temperature, a further quantity of the salt is to be dissolved in the motherwater. This must be repeated every twelve or fourteen hours, until the crystals have reached the desired size. If the solution is too strong, single regular crystals are seldom obtained at once, but this is generally of no consequence, for, as long as one side at least is perfectly formed, it is only necessary to turn them two or three times, to cause the other sides likewise to become perfect. As the crystals increase in size, care must be taken to give them a correct position on the plate of glass; and, if the solution is at all concentrated, the crystals must be carefully freed from adhering irregularities and then replaced in the solution.

In a solution of alum, a very oblique octoëder is usually obtained first. This may be allowed to reach a considerable size, after which it is to be laid successively on the narrow sides, when it will gradually become a regular octoëder. If it is always kept lying on the broadest sides, it will continue to grow obliquely.

It is well known that several isomorphous salts may be crystallized, one over the other, in layers, without a change of crystalline form. Chrome-alum crystals may thus be covered with crystals of ordinary alum. The largest crystal of this kind obtained by the author weighed over three pounds.

The author also observed that, when employing the same motherwater for a considerable time, the crystals began to show blunt or flattened points. This happened with regular as well as with oblique crystals, so that in place of eight surfaces, the regular crystals gradually assumed sixteen equal sides, and the irregular ones, fourteen smaller and two larger sides. If, however, the motherwater be acidulated with a little sulphuric acid, this flattening of the points occurs but rarely.

As a general rule, by changing the position of the single crystals of any salt, but particularly of sulphate of zinc, copper, nickel, or magnesium, and of Rochelle salts, different forms of the same system are obtained. If crystals of Rochelle salt, which may easily be obtained of large size, are always placed upon one and the same side, one-half of the crystal will become perfectly developed; but if they are laid, alternately, upon the two opposite long surfaces, the development is less regular. On placing large crystals of the same salt, even if only half developed, lengthwise into the liquid, alternately upon either end, development of the lateral surfaces proceeds very regularly.

It is not advisable to introduce crystals into a solution if the latter is at all warm, or to pour a warm solution into a cold one containing crystals, as the latter are thereby generally torn or broken. If a portion of a crystal has been by accident broken off, it may be repaired by subjecting it to the above-detailed process. In a crystal of chrome alum, from which a piece weighing ten grams had been broken off, the gap was completely restored, by subjecting it to the feeding process for a fortnight.

As soon as the crystals have attained the desired size, it is best to place them into less concentrated solutions, in a slightly cooler place; this after-treatment causes the surfaces to become smooth and levelled, and the edges to become sharp.

Doane's Seidlitz Powder Machine.

WE published in our August number for the year 1877 an outline engraving of Doane's Seidlitz Powder Machine, then just patented. Following our notice of the machine, we have received a number of letters of inquiry in regard to it, and owing to the interest which appeared to exist in relation to it and its work, and to the fact that its inventor, Mr. Charles R. Doane, of Brooklyn, N. Y., has recently made a number of alterations and improvements, we give herewith an accurate engraving of it in its present form, and the following description furnished by Mr. Doane.

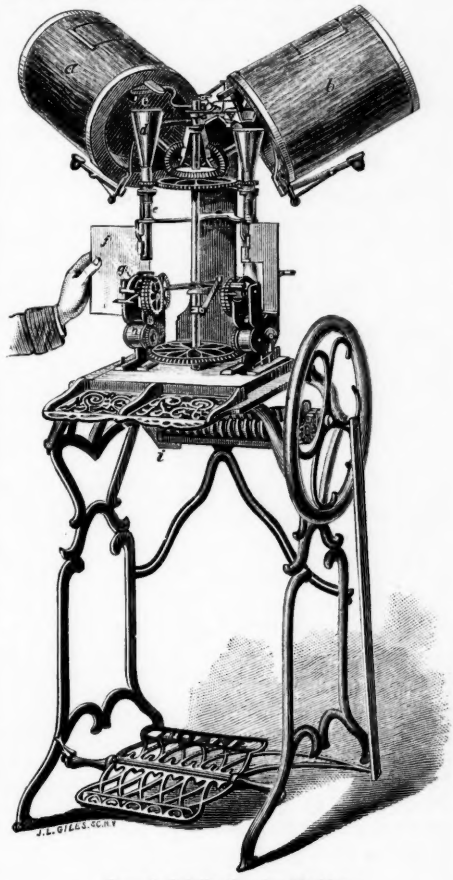
This machine measures and folds ready for boxing, not only Seidlitz powders, but also any material capable of being put up in the same shape. It works with great rapidity, turning out, when run at only moderate speed, seven hundred

powders (350 of alkaline and 350 of acid) per hour, and by a rapid operator may be run up to one thousand. The duties of the operator are simply to propel it in the manner of an ordinary sewing-machine, and to feed in the papers, which are cut in the same form as those used in hand-folding. Although the powders are measured, the mode of measuring is such (the powders being deposited bit by bit in the measurer) that scarcely any variation can be perceived between them, unless great pains are taken and very sensitive scales used, and it is claimed that no advantage can be gained in accuracy over this system of measuring by weighing every powder. A peculiarity of importance is that, although no more paper (or but slightly more) is used, every powder is wrapped in a double thickness; the material consumed in the fold by the hand-method being used to go round the package again in this. Deliquescence is, to a very considerable degree, retarded by such an arrangement.

Referring to the cut, the powder is contained in the receptacles marked *a* and *b*, the acid in the former, and the alkaline in the other. In the process of turning the machine through a half-revolution of the upright shaft to the left, a powder is measured in the can *a*, and is dropped into the funnel *d*, and passes through the tube *c* into the paper already prepared to receive it. This powder is folded, and discharged at the spout *i*, while the machine is moving back to the starting-point. At the same time that the powder on one side is being folded, a paper is being rolled up and the powder measured and deposited in it on the other. The engraving represents the machine just starting to move toward the left; the jaws of the tumbler *g*, on the right side, having just gripped and partially folded the lower end of the paper, and the powder having been deposited therein, while on the left side the paper, as shown at *f*, is just entering to be rolled up in cylindrical form. The motion of the machine is simply a half-revolution of the upright shaft to and fro, a powder being discharged at each of these movements. The movement of the balance-wheel is continuous in one direction, and seven revolutions of it are required to move the upright shaft *a* through a half-revolution, thus giving an easy and steady motion to the machine, and allowing abundant opportunity for feeding.

The machine occupies about the same room on the floor as a sewing-machine, and works about as easily, making not much more noise. It is as little liable to get out of order and is equally as durable.

The size of the powders, when folded, is three by one and three-eighths inches, and the quantity of powder may be graduated, by the simple turning of a nut, from a drachm and a half up to three drachms, in the case of the alkaline powder, and from nothing up to one drachm, in the case of the acid powder. After being folded, the package is pressed flat and even by being passed through the rubber rollers shown at *h* in the cut. The cans containing the powder are of wood, and the funnels and tubes are lined with the same material, thus preventing corrosion or the sticking of the powder to the surface.



Doane's Seidlitz-Powder Machine.

The price at which the machine is sold ($300) is but small in consideration of the amount of work which it can perform.

Vanilla.

THE large crop raised last year in Reunion and Mauritius (41,270 kilos)—comprised under the commercial term Bourbon-vanilla—is counterbalanced by a deficit of Mexican vanilla of 11,000 kilos. Still the price is low. Artificial *Vanillin* is sold at one-half its former price, and is in very limited demand, its odor being by no means as lasting as that of the natural drug.

Star-Anise.

MANY lots arrive in Europe, which are mixed with exhausted seed—deprived of the oil in China.

SOME COMMERCIAL FEATURES OF CINCHONA AND QUININE.*

BY DAN. C. ROBBINS, NEW YORK.

WHENEVER the term Drugs has been mentioned in connection with commerce, in the past, it has been customary to assign to opium the first place in importance, but an examination of the statistics of the Government will show that the average import of this last drug, "opium," is but about 220,000 pounds per annum for all purposes; while it is conceded that its use as a deleterious narcotic exceeds its proper employment as a medicament, and taking the average value of this drug at about four dollars per pound, in bond, the result is a sum of less than one million of dollars; while the yearly consumption, within the United States, of sulphate of quinine alone has been computed at 800,000 ounces, which, at an average value of $2.50 per ounce, makes a total of two millions of dollars, as opposed to less than one million for opium for all uses, or for opium as a medicament at least four to one. Further, the cost of sulphate of quinine has so increased of late years that resort has been had to the other alkaloid salts of cinchona, and in particularly cinchonidia sulphate, for which salt, hitherto but little used, the demand has enormously increased, thereby enhancing the value and the importance of cinchona bark.

Quinine was discovered in 1820 by Pelletier and Caventou, of France, but this product of chemistry, like most new agents in medication, was slowly introduced into common use.

My first acquaintance with this alkaloid salt began in 1826, when I entered as an apprentice a dispensing establishment. At that period, it was mostly prescribed by the medical profession as an *occasional* remedy in intermittent malarial fevers, in doses of 10 to 20 grains, in powders of 10 in number, the usage being to weigh and divide into 10 papers to be administered at intervals of one hour each. The large demand which exists at the present time for quinine as a malarial preventive, or tonic, or for subsequent treatment in malarial disorders, was almost wholly supplied, for years after its first introduction, by various preparations of cinchona bark.

Calisaya, or quinine bark, as this variety of bark was frequently called at this period, was powdered and prepared for market as a proprietary article in neat packages of 1, 2, and 4 ounces, with directions for domestic preparation and use, and extensively sold. But the new alkaloid salt worked its way into increasing use, and it made its first appearance in the customs list of the country in 1832, under a *protective duty of* 15 *per cent* ad valorem, in place of 5 per cent, as heretofore, among *unenumerated articles*.

The demand for quinine increased, but the supplies of cinchona bark more than kept pace with this demand, and the price of quinine sulphate declined from several dollars to $1.25 per ounce, when the Peruvian Government conceived the idea of making cinchona bark a Government monopoly, because at that period our supply of calisaya or quinine bark, yielding not less than 2½ per cent of quinia, was supplied by the single South American port of Callao. At that period, 2½ per cent was considered to be the minimum at which cinchona bark could be successfully treated for quinine, and an arrangement was made with English capitalists for advances on shipments. The crude bark was controlled and so managed that the price of sulphate of quinine was gradually advanced in the American market until it reached $4.00 per ounce. This monopoly, however, like most arrangements of the sort, could not be continued for a long period. The increased price brought into use better methods of process in manufacture, and it was found that lower grades of bark, yielding less than 2 per cent, could be used with profit for the manufacture of quinine.

The enormous development of the manufacture of quinine in our own country dates from this period, as our own market has always been well supplied with the cheaper grades of bark, and but sparingly with the more valuable varieties.

Taking the year 1850 as a starting point, because at that period the government monopoly of bark which has been referred to, existed, the price of quinine sulphate of American manufacture, for the past twenty-eight years, has ruled, and our tariff variations have varied.

Years.	Variations.	Duty on Quinine.	Duty on Bark.
1850	$3.60 @4.00	20%	15%
1851	3.60 @3.90	"	"
1852	2.80 @3.58	"	"
1853	2.70 @3.57	"	"
1854	2.70 @2.80	"	"
1855	2.60 @2.70	"	"
1856	2.40 @2.70	"	"
1857	1.40 @2.00	15%	Free.
1858	1.25 @1.40	"	"
1859	1.25 @1.40	"	"
1860	1.25 @1.75	"	"
1861	1.70 @2.00	20% / 30%	10% / 15%
1862	2.00 @3.00	45%	20%
1863	2.50 @2.85	"	"
1864	2.60 @3.30	"	"
1865	2.45 @3.20	"	"
1866	2.37½@2.50	"	"
1867	2.00 @2.37½	"	"
1868	2.00 @2.40	"	"
1869	2.10 @2.46	"	"
1870	2.20 @2.30	20%	Free.
1871	2.30 @2.50	"	"
1872	2.45 @2.50	"	"
1873	2.45 @2.50	"	"
1874	2.40 @2.50	"	"
1875	2.45 @2.35	"	"
1876	2.10 @2.45	"	"
1877	2.38 @4.50	"	"

* Abstract of a paper entitled "Quinine in Commerce and Quinine in Pharmacy," read at a Conversational Meeting of the New York College of Pharmacy, Nov. 21st, 1878.

The most noticeable fact in this collection of figures is the decline which took place between 1857 and 1860, when, because of the imposition of a duty of 15 per cent on sulphate of quinia in 1857, in place of a differential duty of 5 per cent, as between bark and quinine from 1864 to 1857, the Pelletier company of France undertook the manufacture of quinine in New York.

The price of quinine in 1856, when the differential duty was 5 per cent, was $2.70, and in 1857, it ranged from $2.00 to $1.40; 1858, $1.40 to $1.25; 1859, $1.40 to $1.25; and in 1860, $1.25 to $1.75. In 1861, when the French company left, it was $2.00, and in 1862, it advanced to $3.00, as per tables annexed.

Since 1870, the duty on sulphate of quinine has been 20 per cent, and South American cinchona bark has been admitted free, but all the other salts of quinia and alkaloids of cinchona bark are still subject to the old duties of 45 per cent and 40 per cent respectively, as before 1870, when cinchona bark paid a revenue duty of 20 per cent; and noting the fact that this is now free, and considering the growing importance of quinidia and cinchonidia, as also other preparations of cinchona which are coming into large use, our present tariff duty on all cinchona preparations, including sulphate of quinine, when we take into account the altered conditions of the market for cinchona bark, *is the most objectionable that has ever existed at any period in our history.*

At the present time, it is usually difficult to obtain in the American market cinchona barks that will yield much more than 2 per cent of quinia, while in Europe all grades yielding less than 2 per cent are classed as low.

Within a few years, all previous relations between cinchona bark and quinine have changed because of an increasing demand for quinine, and the varying and uncertain supplies of bark. The following trade report for September, 1878, from the distinguished house of Gehe & Co., of Dresden, gives a very lucid and interesting account of these relations.

Abstract from Gehe & Co.'s September Report.

Peruvian Barks.—In the commencement of the season, *so-called manufacturing barks* were depressed in price, while for the five months succeeding our last report very extraordinary fluctuations occurred; and it seems as if this indispensable medicament will never be restored to the course of commercial articles. As stated in a previous report, it is not the crude article which defines the price of quinine, but on the contrary, the holders of bark, as a rule, fix their prices for bark according to the amount of obtainable product. A rise of nearly 100 per cent occurred in February, and the advance was at its height in April, when a speedy decline followed, until it reached, in July, the level of February prices.

The causes of the changes in the value of quinine will be more minutely discussed in the second part of our report, under the heading of Sulphate of Quinine, as the bark market by itself would not have justified such an agitation.

In consequence of the failure of navigation in the Magdalena river, in Columbia, the stock of Peruvian bark that had arrived up to June, in London, was not as extensive as reported. On the contrary, the stock in that place was reduced from 9,000 bales, in the beginning of April, to 7,100 bales, at the beginning of June. The arrivals in June and July, however, of 2,981 and 4,351 bales increased the London stock so that on the 1st of August it stood at 9,500 bales; at this period a decline was indicated, but competition among the buyers of bark effected a rise, as they had to cover for future delivery their contracts in quinine.

These features, and small arrivals for several months of manufacturing barks, gave rise, in the middle of August, to a new advance of 30 per cent on former values.

Of the 2,839 bales offered at auction on the 13th August, 1,865 bales were sold as follows:

Calisaya, quill, good to fine.....5/4 @7/3.
Carthagena, good.....2/10@3/9.
" superior.....4/9.
Columbia, best brands.....3/6 @3/7.
New Granada, medium.....2/10@3/6.
East India Cinchona, best quill.....7/7 @8/2.
" *Succiruba*.....2/2 @3/6.

And at the last auction of the 27th August, of the 3,300 bales offered, only 1,300 were sold at a further advance of 3*d.* and 4*d.* on the Carthegena and Columbia brands, while the East India and Calisaya barks remained unchanged. Following this, the importers advanced their prices considerably, notwithstanding no direct interruption in the import had occurred, as was anticipated, it being presumed that very high prices would induce new supplies.

For pharmaceutical use, Cort. Chinæ regiæ c. epiderm. has been deficient, and the price has advanced nearly in the same degree as with the manufacturing barks.

New supplies, however, are expected from Ecuador in a short time.

Select nice quills of Cort. Chinæ regiæ sine epiderm. are not obtainable at present; East India barks remain the favorite barks, as is seen by the above selling figures, and it is to be hoped that their influence in the market will increase.

The last year's supply of Java Peruvian bark of 48,000 kilos showed only an increase of 2,000 kilos over and above the crop of 1876, and was sold on the 30th of April, in Amsterdam, at high prices; Calisaya Ledgeriana, testing 7 per cent of quinia, sold for 740 cents per ½ kilo, equal to $2.70 per pound.

Of the remaining Peruvian barks, there is a trifling stock at present. Rubra is nearly all bought up, and the different brands of fusca are mostly held in second hands at full prices. The formerly plentiful Flava sorts (Maracaibo, Lima, Portocabello, etc.) are also very sparingly represented in the market.

Quinine, after February 1st of this year, advanced steadily, until in April a maximum price was reached of 500 marcs per kilo. After this last date a reaction occurred, on account of large arrivals of Columbia bark which had been detained by the unnavigableness of the Magdalena River.

On account of these arrivals of bark, quinine declined to below its real value, as compared with bark, as the stocks of bark which had accumulated during the dryness of the Magdalena River were not so extensive as to seriously depress the market for bark. The financial situation in Columbia had also much to do with the price, as but few exporters were able, owing to the unsettled condition of the country, to make the cash advances which are customary on shipments of bark. But the desire on the part of the manufacturers of quinine to sell was so great that, notwithstanding the condition of the market for bark, the decline continued. Considerable contracts also had been entered into for future delivery at low prices; as with the Russian Government alone for about 3,000 kilos or 106,000 ounces avoirdupois.

And hence there was a disposition to bear the market in the interests of the contracts, but the stocks of bark proved insufficient, and the navigation of the Magdalena River was again interrupted for about two months, which caused the failure of usual supplies during the period of the principal consumption, namely, August and September, when an advance took place, and at this juncture *America appeared in the market with large orders for bark, and the price of quinine was driven upward, in a few days, to the extent of* 50 *marcs per kilo.*

If this advance should cease, a considerable decline cannot be expected for some time, because large liabilities for quinine are yet to be filled, and very large amounts of bark will be required for current contracts.

No large arrivals of bark are expected for the next two months, and there are no stocks of quinine in market; but the pressure for quinine may yield in the winter months, and similar changes may occur as those of July last. Within a recent period the price of cinchona bark has been regulated by the manufacturers of quinine, especially in the United States, but at present, as the result of an increased demand for quinine and an inadequate supply of bark, the price of this last cannot be controlled, hence we want free access to foreign markets, not only for bark, but for quinine, as good brands of European quinine are not unfrequently quoted at a difference of 30 to 60 cents per ounce. Manufacturers of quinine can only contract or offer quinine in safety when in possession of fortunate supplies of bark; and the European market is becoming more and more the best market for desirable cinchonas, especially for the cultivated East India barks, yielding as high as 7 per cent to 8 per cent of quinia, because all these last varieties, of so much interest and of growing importance, are subjected by our tariff policy, in regard to navigation, to an exclusive duty of 10 per cent, while South American barks are admitted free. *The successful cultivation of cinchona in the East and the introduction and extensive use of the hitherto waste alkaloids of cinchona, are the most important facts within the range of our pursuit.* These facts call imperatively for an alteration in our customs laws, and a better knowledge and familiarity with the cinchona barks in foreign markets, and the quinines of foreign manufacture, as there are peculiarities about our domestic as well as foreign quinines that deserve examination in pharmacy.

Hydrobromic Ether, or Ethyl Bromide.

THE method of de Vrij for preparing this ether, which will be described below, has been taken exception to by various observers, because it was found to produce some by-products which could not be readily removed; but some recent improvements of the process appear to have removed almost, if not entirely, this objection. The process is particularly well suited to the manufacture on a large scale, while for small operations Prof. J. P. Remington's process (see *Proc. Am. Pharm. Assoc.*, 1877, 454) is probably preferable.

De Vrij's process depends upon the reaction of ethylsulphuric (or sulphovinic) acid upon bromide of sodium or potassium:

$$C_2H_5.HSO_4 + KBr = C_2H_5Br + KHSO_4$$

ethylsulphuric acid + potassium bromide = ethyl bromide + acid potassium sulphate

The ethylsulphuric acid is prepared by adding to 1 volume of 95 per cent alcohol, contained in a leaden vessel, an equal volume of sulphuric acid (sp. gr. 1830), in a constant gentle stream, and under continuous stirring. The quicker the mixture is made—avoiding, however, accidents from overheating, etc.—the larger will be the yield of ethylsulphuric acid. After standing for some time, the mixture is diluted with $\frac{1}{8}$ to $\frac{1}{4}$ of its weight of water. The addition of the latter is necessary to obtain ample yield; otherwise a large quantity of ether and free hydrobromic acid will afterwards be found in the distillate. The operation of preparing the ether may be conducted as follows:

Into a boiler, of about 34 inches height and 36 inches diameter, lined with lead, and either set in brickwork or provided with a steam chamber, 100 pounds of potassium bromide are introduced; a leaden lid, containing two tubulures, is

hermetically fastened upon it, and a mixture prepared, as above directed, from 100 pounds of 95 per cent alcohol and 200 pounds of sulphuric acid (which make about equal volumes), diluted with 30 pounds of water, is poured through one of the tubulures, which is then closed with a rubber-stopper, carrying a long thermometer. From the other tubulure arises a leaden delivery-tube, which passes through a *well-cooled* condenser. If the boiler is heated by a fire, the fire-hearth had better be constructed on the outside of the building containing the apparatus and condenser. If steam is used, it must have a tension of at least 75 pounds, as the temperature, towards the end of the operation, must be raised to, and kept for some time at, 130° C. (=266° F.). The reaction begins already at 90° C. (=194° F.); towards the end it requires a temperature of 125–130° C. (=257–266° F.). It is remarkable that bromide of sodium requires 10 degrees more of heat than bromide of potassium before the reaction begins.

The resulting distillate is caught in stone-jars, which are completely filled with cold water; the hydrobromic ether sinks to the bottom, and displaces a corresponding amount of water over the rim into the tub in which the jar is placed. These jars are frequently changed, care being taken to have as high a layer of water on the ether as possible, because the contaminating by-products of alcohol, ether, and free acid are thereby washed out. In proportion as these are removed, the solubility of the hydrobromic ether in water diminishes until it becomes insignificant.

This process, carefully worked, will yield in practice very nearly the theoretical quantity of hydrobromic ether of 1.300 to 1.350 spec. gr., and of satisfactory purity.

Oil of Santal.

BESIDES the oil from West and East Indian sandalwood, Gehe & Co. have also distilled some oil from Japanese sandalwood, which is more strongly and agreeably odorous than any other.

Opium.

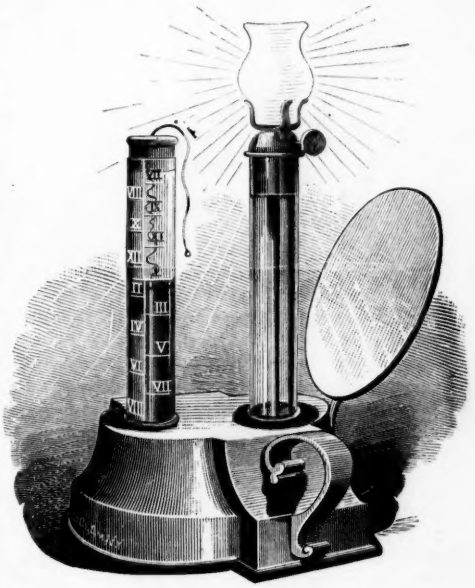
THIS year's crop amounts to about 5,500–6,000 chests, which, together with the existing old stock of about 4,000 chests, would have produced a decided decline, if it had not been known that one of the principal Indian varieties of opium, the Malwa-brand, had turned out to be almost a total failure this year. China has already largely imported the Persian opium, and several lots of Turkish opium have been purchased at London for the Chinese market. The price, however, has so far advanced by only 1*s.* or 2*s.*

Vaseline.

Is largely taking the place of lard for pharmaceutical purposes. The high price of the patented "vaseline" has raised a demand for two other similar products, which will partially take its place, if they are found equally valuable.

Removal of the Odor of Musk.

MR. ERNST BILTZ, in his admirable work "*Notizen zur Pharmacopœa Germanica*," states that the disagreeable persistence of the odor of musk, on the hands and on utensils, may be readily removed by powdered ergot. About a teaspoonful of the latter is placed into the hollow of the hand, warm water is added to make a thin paste, and both hands are then well rubbed with it. The odor immediately disappears and does not return. The author made this observation while making some powders containing musk and ergot; he had triturated the musk with sugar previous to the addition of the ergot, otherwise the resulting odorlessness of the mixture might have caused him to doubt whether he had added any musk or not.



New Time-Indicating Night Lamp.

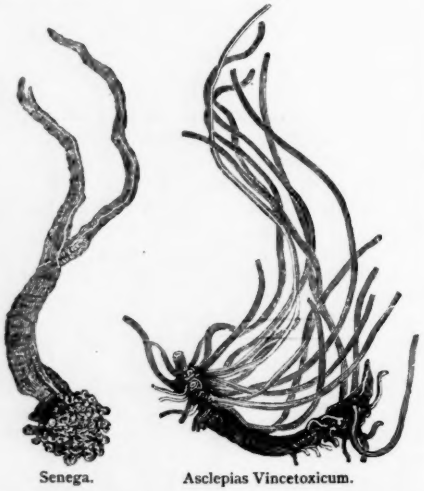
THE accompanying engraving represents an ingenious and very simple time-indicating lamp, recently patented by Mr. Henry Behn, Sr., of this city. The invention consists in a reservoir for containing oil, and two vertical glass tubes rising therefrom. The lamp burner is placed on the top of one of these tubes, and the other contains a float and has the hours marked on it. Near the foot of the tube which supports the burner, there is a reflector which receives light from the burner and throws it upon the graduated tube. As a certain quantity of oil will be burned each hour, the sinking of the oil will indicate approximately the time. The inventor, in some cases, dispenses with the float and uses colored oil.—*Scientific American.*

An Adulteration of Senega.

MR. E. M. HOLMES, curator of the Museum of the British Pharmaceutical Society, writes in the *Pharmaceutical Jour. and Trans.* that one of the most decided cases of adulteration of drugs that it has ever been his lot to investigate has recently come under his notice.

A sample of senega root, forwarded to him by a London firm for examination, was found to contain a considerable quantity of vincetoxicum root (*Asclepias Vincetoxicum* L.). That the admixture was evidently not an accidental one, as is the case with ginseng root, and that it must have taken place in some European country other than England, is evident from the following considerations :

1. *Asclepias vincetoxicum* is not a native of the United States, and is not quoted in American drug lists.



Senega. Asclepias Vincetoxicum.

2. It is not used in medicine in England, and cannot, so far as he had been able to ascertain, be obtained in herbalist shops in that country.

3. The quantity in which the root is mixed with senega, about 33 per cent of the bulk, is too large to be accidental.

On making further inquiries, he obtained the following particulars from Mr. Squire, of the firm of Hearon, Squire & Francis, who had also detected the adulteration some time since.

The adulterated senega first came over to England some five or six months ago, and then only a small quantity appeared, which was apparently sent over to this country to see if its sale could be effected. His suspicions were aroused by seeing that it came from Brussels, where senega is certainly not grown, and he noticed it was mixed with a root unknown to him. The first parcel finding a sale, a large quantity, about a ton, has since followed, and has recently been offered in the London market

Following up the clue thus offered, Mr. Holmes found that the vincetoxicum root, under the French name of "dompte venin," figures in a Brussels price list of "Herboristerie" at 2.20 to 2.40 francs per kilogramme, while senega varies from 10.50 to 11.0 francs per kilogramme, a difference in price which was evidently sufficient to repay the trouble of adulteration, especially when made to the extent of 33 per cent.

As the effects of vincetoxicum differ from those of senega, it has appeared to Mr. Holmes to be desirable to point out to pharmacists, the characters by which the two roots may be distinguished. This is more especially necessary, since senega is not the only root with which vincetoxicum has been mixed.

In the *Journal de Pharmacie* of last year, p. 346, a note by M. Charbonnier, pharmacien at Caen, was published, in which he stated that he found valerian root to be adulterated with vincetoxicum root (here called *asclepiade*) to the extent of 30 per cent.

The root so closely resembles valerian in appearance that only a practised eye could distinguished them when mixed. A few months since, Professor Redwood showed Mr. Holmes a sample of root, of which two tons had been purchased in July, 1877, by a broker, as white hellebore root. This root consisted entirely of *Asclepias vincetoxicum.*

It is evident, therefore, that the root is in England in considerable quantity, and a lookout should be kept for its appearance among other roots than those mentioned. That the root mixed with senega is that of *Asclepias vincetoxicum* there can be no reasonable doubt, for through the kindness of Mr. Thomas Greenish, to whom were given a portion of the root found with senega, and a specimen of the root of *A. vincetoxicum* obtained from the Royal Botanical Garden, microscopical sections of the two have been compared and it was found that they were absolutely identical in structure.—*Pharmaceutical Journal and Transactions.*

Rhubarb.

THE reports from China are very unfavorable. The Shansi-variety, which has been out of market for some time, is not likely to make its appearance at Shanghai, owing to the terrible famine, which is said to have carried off no less than 7,000,000 of souls in the province of Shansi alone. Good Sze-chuen rhubarb is also scarce ; it is therefore probable that only inferior qualities will be accessible.

Saffron.

STOCKS are small, but want of brisk demand has not much increased the price. In July, Spanish saffron sold for 91 francs, and Gatinais for 95 francs the kilo. Sophistications of saffron are coming in vogue again. Some price-lists even quote "weighted saffron" as a regular article!

PURIFICATION OF STRYCHNIA FROM BRUCIA.*

BY ALBERT B. PRESCOTT, M.D.

THE Pharmacopœia recommends treatment with diluted alcohol. Mr. A. D. Smith found that strychnia was soluble in about 500 pts. alcohol, sp. gr. .941, and brucia in about 22 pts. It seems that there was too great a loss of strychnia, and it was attempted to ascertain the amount of loss. Four trials were made. The amount of strychnia dissolved by the alcohol (sp. gr. .941) after one hour's digestion was found to be, 12.6%, 9.2%, 12.6%, and 8.6%.

The solubility of the strychnia was very greatly decreased by diluting the alcohol still further. The alcohol was diluted to sp. gr. .970. It required 2,617.5 pts. of this alcohol (sp. gr. .970) to dissolve one part of strychnia, and 37.3 parts of same to dissolve one part of brucia. To apply this fact in the separation of the two alkaloids, a known amount of pure brucine was mixed with an equal weight of strychnine, fifty parts of alcohol (sp. gr. .970) added, the mixture agitated, allowed to stand one hour, filtered, and the filter washed with as much more of the alcohol. The alcoholic solution after evaporation gave only a slight indication for strychnine. The strychnine remaining on the filter, after dissolving in chloroform, gave no test for brucine.

Ten samples of *commercial strychnia* were treated in this way with alcohol sp. gr. .970. All but two gave tests for brucia.

TABLE SHOWING THE RESULTS.

Sample.	Amount taken in grammes.	Residue after washing with alcohol, sp. gr. .970.	Weight of the residue after evaporating the alcohol.	Per cent of alkaloid dissolved by alcohol sp. gr. .970.	Test for brucia.
No. 1.	.125	.120	.004	3.2	Distinct.
" 2.	.1415	.140	.0005	.36	Slight.
" 3.	.1545	.152	.001	.64	Distinct.
" 4.	.121	.120	.0005	.4	Very slight.
" 5.	.150	.1485	.001	.66	Slight.
" 6.	.150	.148	.0015	1.00	Distinct.
" 7.	.170	.169	.0005	.29	No test.
" 8.	.120	.115	.004	3.33	Distinct.
" 9.	.130	.1285	.001	.76	Slight.
" 10.	.140	.139	——	——	No test.

UNIVERSITY OF MICHIGAN,
SCHOOL OF PHARMACY,
November 4th, 1878.

* Paper read at the Meeting of the American Pharm. Association at Atlanta, Ga., November 26th, 1878.

Antiseptic Gauze.

LISTER'S antiseptic gauze, which is prepared by impregnating a cotton-fabric of loose texture with a mixture of 5 parts resin, 7 parts paraffin, and 1 part of carbolic acid, has the disadvantage of being very stiff and unyielding. Dr. Paul Bruns, professor at Tübingen, proposes to overcome this difficulty by a change in the manner of impregnating the gauze, as well as by a different menstruum. He dissolves 400 grammes of powdered resin in 2 litres of alcohol, adds to the solution 40 grammes of castor oil, and finally 100 grammes of carbolic acid. The whole bulk measures now 2½ litres. This quantity is sufficient for impregnating 2 pounds (about 25 metres) of the gauze (previously deprived of grease). The gauze having been dipped into the liquid and well stirred about, it is removed, and suspended *horizontally*, when it will dry in about half an hour. Thus prepared it is quite soft and pliable, and contains a 10-per-cent solution of carbolic acid. After having been used, it may be cleansed by boiling in very dilute soda-lye, and then be impregnated again.

Improved benzoated or salicylated gauze or wadding has also been prepared by Prof. Bruns. Both of these heretofore suffered from the drawback that on handling they gave off a fine dust of benzoic or salicylic acid, which caused much annoyance to the operator or attendant. Prof. Bruns prepares it by adding 3 to 4 parts of castor oil to the solution—for every 10 parts of benzoic acid. 100 grammes of benzoic acid and 40 grammes of castor oil (or 20 grammes each of castor oil and resin), are dissolved in 2.36 litres (2,360 cc.) of alcohol, the gauze soaked in the liquid, and then dried. This gauze contains a 10 per cent solution of benzoic acid. The salicyclated gauze is prepared in the same manner.

Estimation of Calcium Tartrate in Crude Tartars.

THE ordinary method of estimating calcium tartrate, by precipitating a solution of the crude tartars in hydrochloric acid with caustic soda, does not give correct results in presence of calcium sulphate, as the calcium sulphate and sodium tartrate undergo double decomposition, forming calcium tartrate and sodium sulphate.

To avoid this source of error, Mr. A. Scheurer-Kestner proposes to dissolve the tartar in hydrochloric acid and to precipitate the whole of the tartaric acid as calcium tartrate, by the addition of calcium chloride and caustic soda. The precipitate is washed, dried, and calcined, and the resulting calcium carbonate estimated by titration in the usual way.

Another portion of the tartar is treated with hot water, and the solution is titrated with standard soda. From these data the amount of calcium tartrate and of potassium bitartrate in the crude material can be calculated.—*Compt. Rend.*

Oxalate of Cerium and Caffein as Preventives of the Nauseating Effects of Opium.

"For a long time I have been accustomed to prescribe a strong decoction of coffee, without milk or sugar, in drachm doses, administered every 15 minutes, to relieve the nausea and headache following the employment of opium. Since the introduction of the effervescing citrate of caffein, I have found it a very agreeable and efficient substitute for the less palatable beverage. These agents are, however, only applicable after the occurrence of the stomachic disturbances. The citrate of caffein, though less efficient than the oxalate of cerium, may be combined with opium. It is inadmissible in those cases where opium produces wakefulness instead of drowsiness. I have sometimes fancied that it lessened the soporific without affecting the analgetic properties of opium. It may be that these applications of the drug are quite common, but if they have previously been published it has escaped my observation."—Dr. I. C. Busey, in *The American Practitioner*.

Senna.

Tinnevelly is only to be had in inferior yellow leaves. Alexandrian has become scarce, and most lots are mixed with Mekka or East Indian senna, as well as with sand and stones.

On the Distinctive Tests for Carbolic Acid, Cresylic Acid, and Creasote.*

The author's object was to critically examine the various proposed processes for distinguishing creasote, carbolic and cresylic acids. In the course of his experiments, he found that perfectly pure carbolic acid is much more soluble in water (at 17° C.) than had heretofore been supposed: according to him, 1 part of absolute carbolic acid is soluble in 10.7 parts of water. In order to ascertain how much water carbolic acid would take up, a quantity of about 10 gm. of the crystallized acid was melted and boiled for a few minutes in a small weighed test-tube, to drive off traces of water. After cooling, it was weighed. Cold water was then added gradually, with repeated shaking, until about 0.2 cc. remained as a layer on the surface of the liquefied acid. This was removed by the cautious use of wet blotting paper, and the residual carbolic acid weighed. In two experiments the proportion of water taken up by the acid was found to be 26.6 and 27 per cent, corresponding very closely with the formula $C_6H_6O,2H_2O$ (which requires 27.69 per cent).

Cresylic acid was found, under the same conditions, to absorb between 13 and 14 per cent of water. C_7H_8O,H_2O requires 12.7 per cent.

It was pointed out many years ago, by Calvert, that carbolic acid forms a crystalline hydrate of the composition C_6H_6O,H_2O, which fuses at 17° C. This contains 16.07 per cent of water.

The carbolic acid used by the author for his reactions was Calvert's No. 1, for internal use; boiling point, 182° C.

The cresylic acid was prepared by fractional distillation from Calvert's carbolic acid No. 5, that portion which boiled chiefly at 197° C. being separately collected. The distillations were conducted in an atmosphere of coal-gas.

The creasote was a sample of Morson's wood-tar creasote, boiling at 217° C.

The terms "hydrous" carbolic or cresylic acid, in the succeeding table, which we have constructed from the author's paper, refer to the monohydrated acids mentioned above.

The distinction of these three substances becomes somewhat difficult, if they are mixed. Many of the tests fail in this case. As the problem is to detect the coal-tar acids in presence of wood-tar creasote, rather than the reverse, only affirmative tests for the former are of service. The only marked differences which the author has been able to observe between Morson's creasote and a mixture of equal volumes of that liquid with Calvert's No. 5 carbolic acid, are the following:

1. When shaken with 2 vols. of 9 per cent soda solution, *pure creasote* was dissolved and remained in solution, when the solvent was increased to 3 volumes. The *mixture* was insoluble either in 2, 3 or 4 vols. of 9 per cent soda solution. This anomalous result proved to be due to the presence of water, which reduced the strength of the soda solution. When the water was previously expelled by boiling the mixture, solution took place with 2 vols. of soda.

2. When shaken with Price's glycerin, pure creasote remained undissolved, though the porportion of glycerin was varied from 1 to 3 vols. The mixed creasote dissolved completely and readily in 1 vol. of glycerin.

3. Pure creasote mixed with collodion produces no change. The mixture causes decided precipitation, particularly noticeable on allowing the liquid to run from one end of the tube to the other.

The author also found that fractional distillation of a mixture of the three substances produced a sufficient separation to make at least the tests with glycerin and collodion more decided in the various portions of the distillate.—*The Analyst.*

* Abstract of a paper by Alfred H. Allen, read before the Society of Public Analysts, at Dublin, Aug. 19th, 1878.

NOTES TO TABLE.

* If to a clear mixture of equal volumes of cresylic acid and 9 per cent soda solution a few drops of water be added, precipitation occurs, and when the proportion of water is increased to 1 volume, the original bulk of cresylic acid separates out.

† A mixture of 1 part carbolic and 3 parts cresylic acid is soluble in an equal measure of ammonia, but the solution is precipitated on adding even a few drops of water.

‡ Hence benzol may be used for the determination of the proportion of water in any sample of carbolic or cresylic acid.

	ABSOLUTE CARBOLIC ACID.	HYDROUS CARBOLIC ACID.	ABSOLUTE CRESYLIC ACID.	HYDROUS CRESYLIC ACID.	CREASOTE.
1. Action of cold	Solid at ordinary temp.	Solidifies in a freezing mixt of hydrochloric acid and cryst. sodium sulphate	Remains liquid even in freezing mixture.	Remains liquid even in freezing mixture.	Remains liquid, even in freezing mixture.
2. Solubility in water.	1 in 10.7 at 17° C. Saturated aqueous sol. contains 8.56%.	1 in 11.1 at 17° C.	1 in 31 at 20° C.	1 in 29 at 20° C.	[1 in 80.]
3. Solubility at 15.5° C. in solution of soda containing 6% NaHO.	1 in 1. Addition of more soda solution produces no change.		Insoluble in small quantities of the soda sol. With large excess (about 9 vol.) the acid disappears and crystals form.		Practically insoluble.
4. Solubility at 15.5° C. in solution of soda containing 9% NaHO.	1 in 1. Addition of water produces no separation until after 7 vol. are added.		1 in 1. If 3½ or more vols. of water are added, separation takes place.*		1 in 2. More than 3½ vols. of water produce partial separation.
5. Solubility at 15.5° C. in water of ammonia (sp. gr. 880)	1 in 1. Does not separate until more than 1½ vol. of water are added.†		1 in more than 16 parts of water, and forming crystalline scales.†		Almost insoluble (1 in 60 to 80).
6. Behavior with benzol.	Soluble in all prop.	1 in 5, with *complete* separation of water.‡	Soluble in all prop.	1 in 5, with *complete* separation of water.	Soluble in all prop.
7. Behavior with chloroform, ether, and carbon disulphide.	Ditto. Agitation with 9% soda solution separates all the acid.		Ditto. Agitation with 9% soda solution separates all the acid.		Ditto. Agitation with 9% soda solution separates all the creasote.
8. Behavior with ferric chloride.	1 drop of 10% aqueous solution of Fe_2Cl_6 and 15 cc. of aq. sol. of the acid produces permanent violet-blue coloration.		Same reaction as carbolic acid.		Blue color instantly changing to green and brownish-yellow.
9. Behavior with "benzoline" (petroleum ether, sp. gr. 699).	Soluble in 10 vol. of benzoline. The acid dissolves ½ vol. of benzoline; if more is added, separation occurs.	Almost insoluble in moderate quant. of benzoline, which does *not* separate the water from it.	Miscible in *all* prop. No separation or crystals on exposing to freezing mixture.	Sparingly soluble: 1 in 20. The water then separates.	Miscible in *all* prop.
10. Behavior with glycerin (Price's); sp. gr. 1.258	Miscible in all prop. 1 in 1 is not precipitated by 3 vol. of water. If 25% or more of cresylic acid is present, more than 2 vols. of water produce precipitation.		Miscible in all proportions. 1 in 1 is completely precipitated by 1 vol. of water.		*Insoluble.*
11. Behavior with collodion.	Shaken with ½ vol. of collodion causes separation of gun-cotton in gelatinous, scarcely visible state. Addition of creasote causes re-solution.		Same reaction as carbolic acid.		Mixes perfectly without precipitation.

On the Collection of Balsam of Peru.*

BUSINESS engagements took the writer sufficiently near the Indian town Cuisnagua, one of the best-known centres of the balsam industry, to make a visit to it feasible. The balsam is collected only in the area bounded by lines passing through the harbor of Acajutla, the towns of Isalco and Santa Tecla (New San Salvador), and the harbor La Libertad. Outside this area single trees may be found, but no balsam is collected; nor is any of it prepared on the sea-coast, but in mountainous uplands some miles from the sea. The balsam tree is much like the European oak, but its bark is smoother, and more like that of the walnut; the leaves are mostly small. Only one species is met with on the balsam coast. The *Myroxylon Pereiræ* will live a hundred years, if not killed by external causes. In their native district balsam trees for generations have formed the only property bequeathed by the father to his children. They produce balsam all through their life, but begin to yield abundantly at 25 to 30 years, when they flower for the first time. They yield balsam from December to June every year, but most largely in dry seasons. In the time of flowering (February to March) the production ceases. The color of the juice differs with the age of the tree. When young, it is greenish-yellow; when old, a chestnut brown. The leaves contain an aromatic oil; the seeds, a very small quantity of yellowish resin, which is extracted with alcohol, and sold in the pharmacies of the Balsam coast as *Balsamito* or *Balsamo Catolico*. It is highly esteemed as a remedy for various external and internal ailments.

The balsam harvest generally takes place only in the dry season. After the close of the rainy season (December) the trees are prepared. At the new moon the bark is lightly beaten in twenty or thirty places from once to three times the size of the hand with the back of an axe-like instrument called *hacha*. After eight days, when the beaten bark has become loose, and separated itself from the wood, it is cut away with the *hacha*. At this time clean rags of all descriptions are applied to the wounded parts, and absorb the yellow juice which exudes. After two applications of the rags, each lasting eight days, the wounded places are set on fire by means of a kind of resinous reed called *hachones*, and allowed to burn for a few minutes, and then extinguished. If allowed to burn longer, a general conflagration might ensue, for the sap is very inflammable; this is one reason why the rags are first applied without burning the wounds. The application of the rags, and their renewal every eight days, is continued after the burning. Sometimes in the month of April the wounds are again set on fire. This burning and heating causes the tree to produce balsam purer and more abundantly. Before it, the juice that flows is yellowish and impure; afterwards, it is purer—a blackish oil or balsam.

The rags saturated with balsam are boiled for a quarter to half an hour with some water in an earthen cooking pot; part of the balsam remains with the water in the pot, the rest remains in the rags, and is wrung out as a washerwoman wrings water from wet linen. The hand-presses used consist of a half-open sack or net, about 15 inches long and made of coarse cords joined by smaller cords. At each end is a hole like the eye of a needle, in which a stick is placed. After the rags are placed in the net one stick is fastened between two steady posts, and with the other the whole is twisted. The expressed balsam is added to what remains in the pot, and after settling, the water is poured off and impurities taken away. This product is called *Balsamo bruto*, and in this condition it is filled into *tecomates*, or gourds. These are wrapped in plane leaves, and either sold (generally at 5 reals or 3f. a pound) to brokers, or carried for exportation to the nearest town, whence it is shipped in glass or sheet-iron vessels of 25 to 100 pounds. The expressed balsam is somewhat impure, and must be purified. This is effected either by allowing it to settle in a larger earthen vessel and skimming off the impurities with a spoon (*purificacion cruda*); or the balsam is heated without water and continually stirred, the impurities being removed as they rise to the surface (*purificacion à fuego*—purification by fire). The balsam which exudes before the firing of the wounds must always be purified by the latter process before mixing it with the rest. This is called rag balsam (*Balsamo de trapo*) to distinguish it from a second kind called *Tacuasonte* (extracted without fire) or *Balsamo de cascara* (bark balsam). This is made by boiling the chopped bark with water, expressing it in the usual way, and submitting the product, which looks like honey, to the *purificacion à fuego:* it is then mixed with the rag balsam. This process gives undoubtedly a larger yield than the others, but it is strictly prohibited on account of the inferior quality of the product and the serious injury to the tree. It is only practised secretly, mostly during the rainy season. A place named Teotepeque, lying very near the coast, is largely given up to the preparation of this kind of balsam, most of which is brought to Sonsonate and shipped from the port of Acajutla. The average yearly yield of balsam from one tree is about two pounds. Balsam is doubtless often adulterated before shipment. A certain *Melassen*, a decoction of the plant *Justicia purpurea*, and even chicken broth, are mixed with it. Castor oil also serves to adulterate it.*—*Chem. and Druggist.*

* Abstracted from a letter from Theophil Wyss, Apotheker, in San Miguel La Union, San Salvador, to Professor Flückiger, published in *Schweiz. Wochensch f. Pharm.*, and No. 119 of the *Pharmaceutische Handelsblatt.*

* The statements with respect to the falsification of the balsam seem to me very doubtful; the chief adulteration, though probable, is but rarely met with, and most likely takes place first in Europe.—Prof. Flückiger.

NEW REMEDIES.

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EDITORIAL.

MR. GUSTAVUS JOHANNES LUHN, the President elected by the American Pharmaceutical Association at its recent meeting in Atlanta, Ga., whose portrait we give with this number, is a native of Genthin, in the province of Saxony, Prussia, where he was born on the 7th of June, 1839. At an early age he removed with his parents to the City of Berlin, where he received his education, and when about eighteen years of age he immigrated to the United States. Previous to his coming to this country, he had obtained a preliminary knowledge of the drug business, and subsequent to his arrival he continued to devote himself to the study of pharmacy, residing alternately in New York, Baltimore, and Richmond, Va. In 1868, Mr. Luhn removed to Charleston, where he began to do business on his own account.

Although the field was well occupied before Mr. Luhn entered it, his ambition to keep abreast with the rapid progress of pharmaceutical science quickly led to his occupying the foremost rank among his associates, and, in 1873, he became a member of the American Pharmaceutical Association. In 1876, he was elected to the Second Vice-Presidency, and has of late acted as the Authorized Agent of the Association in his State.

Mr. Luhn has chiefly distinguished himself in his efforts, for several years past, to establish a Pharmaceutical Association in South Carolina. In spite of many discouragements, he finally succeeded and was elected to be its first President. At the expiration of his term of office, he was placed on the Board for Examining Applicants for Apothecary's licenses.

By the community in which he lives, Mr. Luhn is highly esteemed as a public-spirited and energetic citizen, and his election to the office of President of the American Pharmaceutical Association was no doubt intended as a recognition of his services in organizing the profession of his State.

THE interest which is at present manifested by the medical profession in Europe and in this country in the investigation of the comparative values of the different cinchona alkaloids, while it may to a small extent have been due to philanthropic efforts of a few professional men, or to the desire for producing a saving in governmental expenses, is no doubt equally, if not mainly, due to the efforts made by the manufacturers of cinchona alkaloids to find a market for their accumulated by-products. In former times, while quinia was almost the only alkaloid which was in regular demand, the latter had to bear almost entirely the whole expenses of the manufacture of the alkaloid, as the by-products were not easily disposed of, and some of them could not be sold at all. The therapeutic value of the latter, as being equal to quinine, or at least nearly so, has, however, been so well established during the last few years that there will be no difficulty, hereafter, for manufacturers to get rid of their secondary products. The prospective effect of this will be a *comparative* decline in the price of quinine. We say *comparative*, that is, compared with the other cinchona alkaloids. The *absolute* price of the former as well as of the latter is ruled by other conditions and depends upon circumstances which it is impossible to foresee. There can be no doubt that a large amount of the secondary alkaloids of cinchona, which have for a few years past been thrown on the market, has been in part derived from old accumulations of by-products which had probably not been calculated upon as likely to yield a fair return. The sale of these in a marketable condition must have put a good and unexpected profit into the coffers of the manufacturers which we are far from begrudging them.

The time will, however, soon arrive (or, for aught we knew, may have arrived some time

ago), when the demand for the secondary alkaloids will increase to such proportions as to necessitate the working of barks expressly with a view to their preparation. This may be of considerable influence upon their price, and is not unlikely to increase their value.

Some of the most disagreeable by-products for the manufacturers of quinine are the amorphous alkaloids which are left behind, and which are known commercially under the name *quinoidine* or *chinoidine*. When freed from impurities as much as possible, this substance has a dark-brown resinous appearance, being hard and easily pulverizable to a light-brown powder; is entirely soluble in alcohol and dilute acids, and consists mainly of the inverted or uncrystallizable alkaloids, partly produced from the valuable natural crystallizable alkaloids through accidents or faulty manipulation during the manufacture, partly present as such already in the natural bark. There is no reason whatever, in our opinion, why this valuable substance should continue to lie under the ban, as an "impure compound of uncertain composition." The fact is pretty well established that *quinoidine* is fully capable of doing the same work as the other cinchona alkaloids in slightly increased doses, and, according to some authorities, even in the same doses. As made by different manufacturers, it may differ somewhat in the percentages of the various amorphous alkaloids it contains, but we fail to see what difference this could make, provided it is shown, as it *has* been, that, no matter from what source quinoidine has been obtained (provided, always, that it was not adulterated), it appeared always to have the same effects. While we may therefore hope that the secondary cinchona alkaloids (we mean here: cinchonidine, quinidine, and cinchonine), as well as the amorphous quinoidine, will be raised to the rank they deserve to occupy, we are at the same time not unmindful of certain objections made against the *form* and *appearance* of the last-named substance, either whole or in powder. It is argued that it is unsafe to employ it, as it has no easily recognizable physical properties, such as a definite color or colorlessness, crystalline shape, etc., etc., and that it would hence be easy to palm off adulterations upon the unwary. That this may not be the case is the business of every pharmacist to guard against. Let him obtain his supply either directly from the manufacturers or from those few houses which are known and profess to make a business of dealing in such articles, *and who hold themselves responsible for the purity of the products coming from their hands.* and we are firmly convinced that he will be served to his satisfaction. At the same time it will be to his own interest to apply the few appropriate necessary tests, in order to convince himself of the purity of these products.

RECENT PAPERS.

Bahama Sponge Fishery.—The *Journal of Applied Science* states that the supply of the best and largest sponges at the Bahamas fisheries is certainly diminishing, and there is no fresh ground to work on in that district. Ten years ago, the quantity shipped was to the value of £40,000, and in some subsequent years it reached £30,000 and more. The following were the exports, classification, and value of sponges in 1876:—

Kind.	Quantity.	Value.
	Cwts.	£
Boat	203	763
Glove	168	575
Grass	744	1,621
Hardhead	272	1,241
Reef	197	2,373
Refuse	203	386
Velvet	477	4,765
Wool	427	5,273
Yellow	135	340
	2,826	17,337

In the same year, the very commonest Levant sponges cost 1*s.* 2*d.* a pound in Crete, while the best of the Bahamas, according to the prices quoted above, cost only 2*s.* 2*d.*—*Chem. and Drugg.*

Camphor, Gutta-Percha and Gurjun Balsam.—MAJOR FREDERIC MCNAIR, in his recent work, "Perak and the Malays," states that the camphor tree does not grow in Perak, though it is believed to exist at Salangore. "The gutta tree is tolerably plentiful, and its curious gum is extracted by cutting down the whole tree, tapping it on the under side, and allowing the gutta to exude into vessels placed for its reception. This gum is frequently used by the young Malays to catch birds, forming a most glutinous bird-lime. The name by which it is known in England—gutta-percha—many people may not be aware, is rather a redundant one, percha being only the native name for Sumatra, whence the gutta was, perhaps, originally brought." In the same work we read:—"Large quantities of wood oil or kayoo minyati (gurjun balsam) are also obtained by the Malays by cutting a triangular hole right into the trunk of a forest tree, and placing therein a cup or half a cocoanut shell. Fire is then applied, and the oil is melted and drops into the cup. This oil forms a kind of varnish, and is used for the interior work of their houses, and sometimes as a medicine. It is also used, either alone or mixed with sugar of lead and red arsenic, to prevent the attacks of white ants." Bates, in his "Naturalist's Voyage on the Amazon," mentions that the best way to keep insects out of the beds and meat-safes is to set the feet of the one in little vessels of copaiba and anoint the wires which suspend the others from the ceiling with the same liquid.—*Chem. and Drugg.*

Iodide of Iron and Iodide of Ammonium.—(C. PAVESI.) All previous processes proposed for preventing the alteration of the (proto-) iodide of iron, or of iodide of ammonium, being more or less defective, the author recommends to use *albumen* for this purpose. He prepares unalterable iodide of iron as follows:

Iodine, pure	1 part.
Egg-albumen, dry, soluble	3 parts.
Iron-filings (or wire)	q. s.
Mannite	5 parts.
Distilled water	q. s.

The (proto-) iodide of iron, or ferrous iodide, is prepared in the usual manner by bringing together the iodine, iron-filings, and water in a flask; when the solution has acquired a greenish color, the albumen and mannite added to it. The whole is heated to a temperature of about 104° F., and when solution has taken place, filtered through paper.

The filtrate is evaporated at a very gentle heat in a shallow capacious capsule to perfect dryness. The residuary scales are detached with an iron spatula and preserved in a glass-stoppered bottle. Thus prepared, the salt is in brilliant, pale-yellow, odorless scales, very soluble in water, and giving no reaction of free iodine with starch-paper.

If it is desired to obtain colorless iodide of ammonium, and the presence of albumen is not objectionable, it may be prepared by adding to it a definite quantity of albumen and mannite, as in the case of iodide of iron.—*Giornal. de Farm. di Torino.*

Experiments with Antiseptic Dressings.—DR. BRADFORD recently showed at a Boston Medical Society some specimens of meat done up in different dressings, and said that it was admitted that the main principle in surgical dressings consisted in the prevention of putrefaction of the discharges and dead organic matter about the wound. There had been a number of experiments as to the relative value of different antiseptics, but few, if any, as to the protective power of different dressings.

A piece of meat dissected from a freshly killed kitten and put into a bottle which had been rinsed out with carbolic acid (1 to 20) putrefied in three days. This was the case in a bottle corked and in one left open. A piece of fresh meat placed uncovered on a table at the side of the bottles dried up, and eleven days later gave no odor. A piece of flesh wrapped in water dressing became foul in three days. Flesh dissected out under spray and placed in a Lister dressing (antiseptic gauze), at the end of three weeks was found perfectly fresh, not being at all dried. Flesh wrapped up in lint wet with terebene, at the end of three weeks was fresh and not dried. The same wrapped in lint wet with compound tincture of benzoin remained sweet, but dried. Labarraque's solution (1 to 10) poured on a cloth and wrapped about the meat delayed putrefaction, but did not entirely prevent it. At the end of three weeks the meat was foul, but not so putrid as that in the water dressing. The same can be said of a solution of sulphite of soda 1 to 10. A mould was found on this dressing which, on examination, was found to be Penicillum glaucum. Meat wrapped up in dry cotton cloth, Dennison's absorbent cotton, oakum, salicylicized tow, or lint soaked in benzoic acid became desiccated. Meat not dipped in carbolic acid and covered with goldbeater's skin to prevent desiccation was not protected, when wrapped in cotton, from becoming at the end of three weeks slightly putrid. A piece of meat, however, placed in a glass tube, the end of which was stopped by cotton, without any treatment by carbolic acid, dried and remained free from putridity. The cotton in this case did not act by absorbing the fluid and desiccating, as it was so placed as not to touch the meat. Meat completely covered by fuller's earth and charcoal became dry, and remained free from odor. The piece of flesh which at the end of three weeks was the freshest, being as soft as when first dissected off, and entirely free from odor, was that wrapped in the antiseptic gauze. The next in excellence of preservation was that in lint wet with terebene. It has been stated that Lister's success is perhaps not due to any antiseptic (in the strict sense of the word) action of the dressing, but to the cleanliness his method enforces. As far as experiments on dead flesh can bear testimony, it seems evident that there is a strictly antiseptic action in Lister's gauze dressing.—*Boston Medical and Surgical Journal.*

Guaycuru or baycuru is the vernacular name given to a plant growing on the shores of Rio Grande. It imbeds itself more or less in the sand, a number of radical leaves rising above, and being some five to seven inches in length by one and a half or two inches in breadth. The flower resembles that of London Pride (*Saxifraga serratifolia*). The whole plant is sometimes covered by the sea for days and even weeks together, dependent on the direction of the wind, there being no tides in this locality. I am indebted to Mr. Thomas Hallawell for a specimen of the root, and also to Dr. Landell (both residents in Brazil) for reliable information as to its medicinal properties, and uses to which it is applied. I do not find mention of the plant in Chernoviz's Formulario ou Guia Medica, which is practically the Pharmarcopœia of Brazil, or in any botanical work at my command. Mr. Holmes has also kindly searched in the Pharmaceutical and British Museum libraries, but has found no satisfactory information concerning it. From a sample, however, with the foregoing description he believes it to be a *Statice*, probably *Statice Braziliensis*, and although the Plumbaceæ are not generally inhabitants of tropical climates, some do exist there, and from the marked resemblance of the chemical and medicinal properties of these and baycuru it seems very probable that the above conclusion is correct. Further specimens are promised, including a flower, which will of course be more satisfactory for identification.

The root is the part used medicinally, both fresh and dry. In the latter state, the pieces are six or seven inches in length, from one-third to one inch in thickness, and tortuous in shape. The cortical portion is thin, of a dark chocolate color, contrasting markedly with the central portion, which is of a flesh color in some pieces, in others darker; the former has an acrid astringent, the latter a purely astringent taste, which suggest the probability that the acrid resin exists in the cortical portion only. The natives have an unlimited amount of faith in its virtues as an astringent and discutient remedy in all kinds of enlargements and glandular swellings, externally as a fomentation, and frequently as a vapor. It is also prescribed by the medical men, not as a specific, for Dr. Landell tells me he has sometimes found it to fail utterly, but as a rule it is reliable, both externally and internally, and forms a valuable astringent gargle. The sample which arrived quite recently was only small, and therefore, for want of both time and material, I have been unable to make as complete a chemical examination of its constituents as could have been wished; nevertheless I will submit the principal results obtained. The process followed was that recommended by M. Fleury for proximate organic analysis (*Journal de Pharmacie et de Chemie*, 1872), which with some modifications is that of Dr. G. C. Wittstein (*Anleitung zur Chemischen Analyse von Pflanzen.*)

The substance to be examined is dried to ascertain the amount of moisure present, powdered, and percolated to exhaustion with anhydrous ether, absolute alcohol, cold and hot water, dilute chlorhydric acid, and solution of potassa respectively, the residue being dried and weighed between each operation. Fresh portions are then distilled with water, dilute acid (preferably phosphoric), and milk of lime.

The ethereal solution first obtained might contain all substances soluble in that menstruum, such as fats, resin, wax, volatile oil, alkaloids, glucosides, etc.; it is concentrated and agitated with a little water, allowed to repose, and the different layers are examined for these substances.

The alcoholic percolate is evaporated to dryness, agitated with water, etc., and the other solutions are examined for such constituents as they may contain, starch, gum, dextrine, albumen, salts, sugar, etc., each being tested by the usual reagents for alkaloids, and although I obtained reactions, and even a minute quantity of crystals, which possessed the characteristics of an alkaloid, I cannot regard its existence as actually proved, and must await the arrival of further supplies for its verification. The activity of the root partly, if not chiefly, depends on tannin, of which it contains about 12.5 per cent, and its greenish colored reaction with iron salts indicates that it belongs to that variety known as mimotannic acid. It also contains 1.3 per cent of acrid pungent resin, soluble in ether and alcohol; a small quantity of volatile oil; a resinous substance, insoluble in ether, soluble in alcohol; proteic and pectinaceous bodies, starch, coloring matter, chloride and sulphate of sodium, potassium, a soluble silicate, and 14 per cent of moisture. The ash, 4.5 per cent, consists chiefly of soda and silica.

Pharmaceutically the infusion (℥ss. to the pint) and proof spirit tincture (1 to 10) appear to be the best prepa-

rations, the dose of the former being one ounce, of the latter one to two drachms. An aqueous extract, of which it yields one-third its weight, contains all the astringent properties, but an alcoholic extract contains the acrid resin on which I presume its discutient properties more or less depend.

In conclusion, I would call attention to the apparatus recommended by M. Fleury for the exhaustion by ether and alcohol. It is not new, and is usually mentioned as an apparatus for continuous distillation; but this is really a misnomer, inasmuch as the percolate, and not the distillate, is the object for which the process is conducted. I have here a rough sketch of it, my object being partly to point out that it is not altogether the most convenient form, but with some slight modifications it answers the purpose admirably, economizing both time and menstruum. An apparatus differing somewhat in form, but of the same character, for manufacturing purposes is illustrated, described, and recommended in Dorvault's 'L'Officine,' p. 1265.—CH. SYMES in the *Pharm. Jour. and Trans.*

Chronic Chloral Poisoning.—The fatal dose of chloral, according to various authorities, varies from 180 grains to 30, or even 10 grains, whereas, in the treatment of delirium tremens, an ounce has been administered in twenty-four hours with only good results. Dr. Frank Woodbury attributes these differences to variability in the quality of the remedy on the one hand, and idio-yncrasy on the other, *e. g.*, anæmia of the nerve-centres, cardiac debility, dilatation, or obstruction. A man who took chloral to quiet sleeplessness and nervousness, following the stoppage of a habit of taking alcoholic stimulants, gradually increased the dose to a drachm and a half daily. After a period of four months this was stopped rather abruptly, and resulted in decided evidences of disturbed nervous action, such as delirium, muscular weakness, sweating, nausea, anorexia, etc., from which he recovered with the aid of morphia.

Idiosyncrasies in regard to the Use of Silver Nitrate.—DR. MERIWETHER LEWIS, of Lenoir, Tenn., reports a number of instanc s occurring in the members of one family, in which the use of nitrate of silver lotions caused excessive irritation of the mucous membranes and marked reflex nervous phenomena.—*Nashville Journ. of Med. and Surg.*, October, p. 147.

Bromhydrate of Conia is recommended by M. Tyryakian, who believes that a mistake has been made in regard to the poisonous nature of conia. Experiments by M. Audhoui have shown that 10 centigrams are the minimum dose which will have any effect, and that tolerance of the remedy is rapidly induced. Hypodermic injection is recommended as the best mode of administering it. And while conia produces bad effects when so used, the bromhydrate, in solution with water (1 gram in 19 grams of water), may be employed in doses of 5, 10, or 15 centigrams. By commencing with small doses by the stomach, the quantity may be rapidly increased to 50 or 60 centigrams. In the latter case, either pills or syrup may be the form employed.

The formulas used by M. Tyryakian are as follows:

Bromhydrate of conia	1 gram.
Sugar of milk	1 "
Mucilage	q. s.

To be made into 20 or 40 pills containing 5 or 2½ centigrams.

Bromhydrate of conia	1 gram.
Simple or aromatic syrup	250 grams.

A teaspoonful contains 2 centigrams of the salt.

Bromhydrate of conia	2 grams.
Cucumber ointment	40 "

M.

Bromide of potassium	10 grams.
Bromhydrate of conia	1 gram.
Distilled water	400 grams.

Each spoonful of 20 grams contains 50 centigrams of the first and 5 centigrams of the second ingredient.

Composition of the Hunyadi Janos Mineral Water.—PROF. FRESENIUS has subjected this mineral water to a new analysis, which has yielded the following results:

(The carbonates are calculated as neutral carbonates, and all salts are calculated as free from water of crystallization.)

1,000 parts by weight contain:

1. Constituents present in weighable quantities:

Sodium sulphate	19.662
Magnesium sulphate	18.449
Calcium sulphate	1.322
Potassium sulphate	0.133
Sodium chloride	1 424
Magnesium carbonate	0.731
Ferrous carbonate	0.002
Silicic acid	0.011
	41.735
Carbonic acid, in combination	0.384
" " free	0.013
	42.132

2. Constituents present in unweighable quantities:

Traces of lithium, strontium, nitric and boric acids, bromine, iodine, and organic substances. Faint traces of phosphoric acid and nitrogen.—*Zeit. d. Anal. Chem.*, p. 461, 1878.

Estimation of the Cinchona Alkaloids by Means of the Polariscope.—MR. MATHIAS ROZSNYAY, of Arad, Hungary, has published a pamphlet in which he communicates the results of his experiments on the use of the polariscope for cinchona analysis. Having first reviewed the different analytical methods heretofore used for separating and identifying the different cinchona alkaloids, all of which methods (at least so far as separation is concerned) are more or less unreliable, he proceeds to detail a process of determination by means of the polariscope, or by separation and the polariscope combined, which, although not entirely new, appears to have yielded reliable results in the hands of the author. We give an abstract of the more interesting portions of his paper in the following:

If 5 gm. of each alkaloid (as sulphate) be dissolved in 20 gm. of distilled water, with the addition of 2–3 drops of concentrated sulphuric acid, and the filtered solution examined in a tube, 20 centimetres long, by means of the polariscope, the following *normal* deviations from the zero point are observed.

5% quinia*-solution	=	−22° (left).
5% quinidia-solution	=	+31° (right).
5% cinchonia-solution	=	+25° (right).
5% cinchonidia-solution	=	−14° (left).

If we now mix 19 gm. of the 5% quinia-solution with 1 gm. of the quinidia-solution, we will find that the angle of deviation has been reduced to −19° (left). This mixture contains 95% of quinia and 5% quinidia; if we now multiply the angle of deviation of quinia with 0.95, and that of quinidia with 0.05, and if we deduct † the products from each other, we obtain a figure corresponding with the actually observed angle:

quinia	−22×0.95 =	−20.80
quinidia	+31×0.05 =	+ 1.55 (deducted).
		−19.25 (left).

If we mix 18 gm. of the quinia-solution with 2 gm. of the cinchonidia-solution, we obtain a mixture containing 90% of the former and 10% of the latter. Its angle of de-

* In the following, wherever alkaloids alone are mentioned, the sulphates of the alkaloids are to be understood. For brevity's sake the term "sulphate of" has been omitted.

† Subtraction must be performed if the mixed alkaloids are of opposite polarizing power. In homogeneous alkaloids the values must, of course, be added.

viation is a little over −21°, which is confirmed by the following calculation:

quinia −22×0.90= −19.80
cinchonidia−14×0.10= − 1.40 (added).

−21.20 (left).

This method, applied to unknown mixtures of cinchona alkaloids, must be preceded by a qualitative examination, in order to ascertain what alkaloids are present. If there are only *two* present, the operation is comparatively simple. It depends upon the solution of two equations with two unknown quantities. Supposing we examine 0.1 gm. of a mixture, which we have ascertained to contain quinia and quinidia; we then have the equation

(1) $x+y=100$ (centigrammes),

where x denotes the percentage of quinia and y that of quinidia. Let us assume that the mixture in 5% solution deviates the ray of polarized light 19° to the left, then we have

(2) $-22x+31y=-1900$,*

this becomes

(3) $31y=22x-1900$

(4) $y=\frac{22x-1900}{31}$

But from equation (1) the value of y is

(5) $y=100-x$

which, substituted in equation (4), gives

(6) $100-x=\frac{22x-1900}{31}$;

this becomes successively:

(7) $3100-31x=22x-1900$
(8) $3100=53x-1900$
(9) $5000=53x$
(10) $x=\frac{5000}{53}=-0.943$ (left; as it is quinia).

But $x+y=100$; hence $y=100-x$; hence the percentage of quinidia is 0.057. If we now actually examine the angle of deviation of such a mixture of the two alkaloids, we will find it to be −19° (left), and this is also shown by the calculation:

−22×9.43= −20.74
+31×0.57= + 1.76

−18.98 or practically −19°.

If three or all four alkaloids are present at the same time, it becomes necessary to remove one or two of them entirely, so that only a mixture of two remains. The determination is performed in the same manner as above stated.

It is to be hoped, that a further study of this method will confirm its reliability and practical usefulness.

Albuminate of Iron.—BERNBECK states that the commonly employed formulæ for preparing this compound yield unsatisfactory results. He proposes the following improved process, which aims particularly at the removal of free hydrochloric acid from the ferric chloride:

Dissolve 6 parts of dried ferric chloride in 6 parts of distilled water. Mix the solution intimately with 20 parts of egg-albumen and throw the magma upon a wetted linen strainer. Express the liquid, moisten the magma with a little water, and again express. Repeat this a few times. The excess of ferric chloride is thereby removed. Finally dissolve the residue in ⅓ litre of distilled water, with the aid of 12 drops of hydochloric acid. Allow the whole to macerate for 2 days; then filter.—*Rép. de Pharm.*, 1878, 440.

Examination of the Seed-Kernels of Camellia Japonica.—(KATZUYAMA, Tokio, Japan.) The seeds of this Camellia are considered by the Japanese to be poisonous; the oil obtained from them has formerly been used for oiling the swords of the soldiers. It is very viscid, and of a disagreeable sharp taste. The seeds contain, besides the oil, a neutral principle, having the nature of a glucoside, which the author (working under the direction of Dr. G. Martin) named Camellin.—*Arch. der Pharm.*, Oct., 1878.

Scopolia Japonica.—(DR. G. MARTIN.) This plant, belonging to the order of Solanaceæ, stands between Solanum and Atropa. The root of the plant is used by Japanese physicians for the same purposes as belladonna root elsewhere. It is also called "Japanese belladonna," but its narcotic effects are much less marked than those of true belladonna. It does not contain atropine, but solanine. The plant is further remarkable from the fact that it communicates to liquids a stronger fluorescence than any other plant known.—*Arch. d. Pharm.*, ibid.

Evodia Glauca.—(*Ibid.*) The bark of this plant, belonging to the family of Rutaceæ, was found to contain berberina. It is used as a remedy by Japanese physicians.

Orange-Peel Extract as Indicator in Alkalimetry.—(H. BORNTRÆGER.) As the indicators generally used in alkalimetrical or acidimetrical determinations furnish inaccurate figures in presence of somewhat larger quantities of ammoniacal salts, the author communicates a new indicator which is said to be free from this defect.

Fresh orange-peel, cut into small pieces, is covered with a small quantity of absolute alcohol, and allowed to macerate for 24 hours. A yellow extract is thereby obtained which may at once be used as reagent. But since the essential oil is troublesome in presence of aqueous liquids, it is best to shake the extract with an equal volume of ether, when there will be produced two layers, an upper ethereal, and a lower forming a dense heavy liquid of about 1014 spec. grav., which is to be separated and used as indicator.

This reagent, added to water, does not impart to it any color whatever, but alkalies produce a fine citron-yellow color.

It should, however, be added that this reagent is inapplicable in presence of free ammonia, while it furnishes exceedingly accurate results in presence of ammoniacal salts. It can only be used in daylight, and in the examination of colorless liquids.—*Zeit. f. Anal. Chem.*, p. 459.

Tropæoline as an Indicator.—(W. v. MILLER.) Referring back to the account we have given on page 149 of the last volume, we desire to supplement the information there given by some further statements of the author. The latter recommends a cold saturated *alcoholic* solution of "tropæoline 00" as a reagent for free acids in presence of metallic salts. Paper saturated with the reagent is very sensitive towards inorganic acids, but less so than litmus-paper. The smallest traces of free acid, however, may be recognized, if a few drops of the alcoholic reagent are added to the liquid to be examined, and the examination be made by looking down into the beaker or test-tube from above.

The variety of tropæoline specified in trade as "000" has been found to be the reverse of "00," as it turns crimson with alkalies and is a very delicate reagent. When using it, a drop of the cold saturated *aqueous* solution is added to the liquid, which thereby assumes a faint yellow tinge, and the normal alkali solution is added, until the liquid suddenly turns red.—*Zeit. Anal. Chem.*, p. 475.

Constituents of Cimicifuga Racemosa Ell.—(F. H. TRIMBLE.) The author has not been able to obtain the crystalline principle, the presence of which was announced by Conard in 1871; it therefore becomes doubtful whether cimicifuga contains such a substance or not. He also found a fatty matter present, which was a soft solid at 60° F., but became liquid at 100° F., and yielded glycerin on saponification. No indications of a volatile oil or of an alkaloid were obtained.—*Am. Journ. Pharm.*, p. 468.

Hydrastis Canadensis.—(HERM. LERCHEN.) The author has re-examined the rhizome of Hydrastis and found it to contain: albumen, sugar, extractive matter, a fatty resin, a bitter brown resin, starch, 10% of mineral matters, and three alkaloids, the presence of which had been ascertained previously already by others, but only two of which

* The result being required in percentage, the degrees are to be multiplied by 100.

were better known, namely berberina and hydrastia. The latter is obtained from the motherwater left after precipitating berberina with hydrochloric acid. From the mother-liquor left after the removal of hydrastia, the third alkaloid is obtained, which the author names xanthopuccina, from its yellow color and one of the common names of Hydrastis, namely "yellow puccoon."—*Am. Journ. Pharm.*, p. 470.

Gold in Nitrate of Silver.—(E. B. SHUTTLEWORTH.) All commercial refined silver contains gold, though perhaps in only the most minute quantity. Of nearly 3 tons, which have been dissolved under the author's supervision, none could be described as perfectly pure or free from the more precious metal. English refined silver generally contains more than American stamped bars, of which a considerable quantity must be operated on in order to render the gold appreciable. If such silver be dissolved in ordinary nitric acid, containing traces of hydrochloric acid, both metals will be dissolved, and, as long as the solution is acid and concentrated, minute quantities of both chloride of silver and chloride of gold will be retained. Crystals deposited from the liquor will also contain traces of gold. Such crystals have a faint purpli-h tinge, as also the solution, so that in color it resembles water containing a very small quantity of logwood ink. It is not known in what particular form or combination the gold exists in the silver, nor what special effect this impurity has on the photographic film. It is, however, possible that some of the troubles of photographers—as, for instance, that technically known as fogging—might, in some degree, be due to it. The impure salt may be readily prepared for experiment, by adding to a concentrated hot solution of pure silver nitrate a few drops of solution of chloride of gold. Flocks of chloride of silver holding chloride of gold are precipitated, but, by the addition of a little pure nitric acid, they are dissolved, and if the solution is set aside, crystals similar to those described may be obtained.

Nitrate of silver containing gold may be purified by fusion. On dissolving the cake in water, the gold will be deposited, or may be removed by filtration through asbestos.—*Canad. Pharm. Jour.*, Nov, 1878.

The Use of Iodine in Malarial Fevers.—Since the publication of references to this subject (see NEW REM., pp. 234 and 298, 1878), a number of writers have contributed their experiences to various medical journals. J. H. HERVEY of Indianapolis, in the *Cincinnati Lancet and Clinic*, claims to have been using the remedy for the third of a century. He has never considered it a substitute for quinia in arresting the paroxysms of malarial fever, but finds it to be very serviceable in removing the various sequelæ and in preventing relapses. His custom is to use the following formula:

℞ Tinctura iodinii,
Tinct. ferri chloridi,
Tinct. sanguinariæ..... ãã equal parts.

13 to 15 drops to be taken after each meal for one to four weeks. This is used after the recurrence of the paroxysms has been arrested with quinia, and the latter is also continued in one-grain doses, before meals, for eight to ten days.

E. D. LAUGHLIN, of Orleans (*Cin. Lan. and Clinic*), refers to the *Amer. Jour. of Med. Sci.*, Jan., 1875, in which is quoted an article by Dr. Munro, in which he claims to have tried iodine as an antiperiodic in 1869, in accordance with a suggestion of Willebrand.

Dr. Laughlin has, since 1875, used iodine in chronic ague with the most happy results, and also with good effect in typho-malarial fevers combined with other remedies. He prefers Lugol's solution to the tincture, giving ten to twelve drops thrice daily in ague, and five to eight drops every six hours in fever without regard to pyrexia. Its influence in reducing enlargement of the spleen is very decided.

IN a subsequent number of the same journal, J. N. SCHELL, M.D., of Frankton, Ind., says, that since the appearance of Dr. Fordyce Grinnell's article (see NEW REM., p. 298), he has used iodine in forty cases of quotidian and tertian types, and has had as good results as with quinia. Some cases of quotidian ague were arrested at once, while two cases were not at all affected; he used the following formula:

℞ Tinct. iodinii ..... gtt. lx.
Potass. iodidi..... gr. x.
Syr. simplicis..... ..... ʒ i.

A teaspoonful taken half an hour after a meal.

J. B. DAY, M.D., of Evansville, Ind., writes to the *Lancet and Clinic* that during a scarcity of quinia, twenty to thirty years ago, he commenced the use of iodine as a substitute in cases of chronic intermittent fever, and has continued since to do so. He first employed it to reduce enlarged spleens, and then as an adjuvant in the treatment of chronic intermittents. "Scarcely any case, even under poor hygienic surroundings, will withstand a very persistent course for several weeks, daily, of iodine and iron." He never gives iodine in the acute form of the disease.

IN the *Medical Record* of Nov. 23d, WM. ANDERSON, M.D., of Brooklyn, says that he has used iodine in the treatment of intermittent fever during four years past, without making any selection of cases. The most severe forms of the disease were not met with, but there were cases sufficiently serious thoroughly to test the power of the remedy. Five to fifteen minims of the tincture in a wineglassful of water thrice daily, after food, was the routine treatment. For children, five minims in syrup or glycerin was employed. The compound tincture was used by preference. Over two hundred cases treated. In a considerable number, no paroxysms recurred after commencing the use of the remedy, and it was seldom necessary to renew the two-ounce mixture (16 doses). In a few cases no benefit was derived and in a few, also, the paroxysms recurred on stopping the medicine and again were arrested on renewing its use. His conclusions are, that it is equally as efficacious as quinia, is more palatable, possesses no appreciable bad effects, and is infinitely cheaper.

Solubility of Salicylic and Benzoic Acids.—(E. BOURGOIN.) 1000 parts of water dissolve at different temperatures the following quantities of *salicylic* acid:

0° C.	1.50	40°	5.55
5°	1.65	45°	6.65
10°	1.90	50°	8.00
15°	2.25	55°	9.80
20°	2.70	60°	12.55
25°	3.25	65°	15.25
30°	3.90	70°	19.90
35°	4.65	100°	79.25

The solubility of benzoic acid is a little less than that of salicylic acid, at temperatures over 60° C.—*Compt. Rend.*, pp. 62, 87, 1878.

Preservation of Metallic Sodium, etc.—PROF. R. BOETTGER recommends the following method to preserve metallic sodium or potassium with pure untarnished metallic lustre: The metal, which may be coated with oxide, is first placed into pure ether, to which a few drops of absolute alcohol have been added. As soon as the metal has acquired a brilliant lustre, it is immediately transferred to a capsule containing petroleum-ether, and finally placed into bottles filled with petroleum-ether previously saturated with naphthalin.—*Neueste Erfind., etc.*, p. 551, 1878.

Does Sulphate of Cinchonidia cause Urticaria and Puffiness?—G. W. N. KEMPER, of Maurice, Ind., with his partner, has frequently remarked the frequency with which urticaria attends the use of cinchonidia sulphate in their practice, and among persons who habitually resort to the use of this remedy. This is accompanied in some cases with puffiness of the eyelids, face, and sometimes of the extremities, which does not appear to be dropsical

and is very transitory. Others of the preparations of cinchona appear to have a similar effect, but in lesser degree.

Febrifuge Action of Quinoidine.—It is said by M. Burdel, in an article on this remedy in the treatment of telluric fevers, that, however preferable quinia salts may be in serious and acute cases through its more prompt and energetic action, in the telluric fevers characterized by persistent and mild symptoms, especially in quartan fevers, quinoidine acts quite as well. It must be continued in small, continuous, and intermittent doses for three or four weeks.

Carbazotate of Ammonium in Treatment of Malarial Fever.—J. J. SCHEFFERSTEIN, of Olmy, Ill., failed to obtain beneficial results in the use of carbazotate of ammonium in malarial fevers, when he employed it in cases that had been suffering for some months or years from malarial poisoning. When, however, he preceded its use by the exhibition of saline purgatives, diaphoretics, and chalybeate tonics for several (twelve to fourteen) days, it seldom failed. He advocates the use of the remedy in small doses, and in combination with other remedies, such as arsenic and iron. ¼ to one grain may be used for a dose, and may best be given in pill form repeated thrice daily for three to six days. In doses of $\frac{1}{16}$ gr., it may be continued two to three weeks. The experience of this writer in seven hundred cases shows that, while the carbazotate of ammonium is not so useful in breaking up an attack of malarial fever as quinia, it protects the system longer from a recurrence and is, he believes, the *sine qua non* of all remedies for "chronic chills."—*Illinois Medical Recorder*, October.

Sulphurous Acid as a Remedy for Pruritus.—The editor of the *Obstetric Gazette* reports cases of pruritus of the vulva and accompanying eczema which have been at once relieved by using as a lotion sulphurous acid in full strength.—*Obstetric Gaz.*, October.

Hydrate of Chloral per Rectum.—Dr. Starcke, having suffered extremely from loss of rest, in consequence of gastric catarrh, resorted to the use of chloral hydrate by enema, using about fifteen grains (one gram) thoroughly dissolved and passed high up into the rectum by means of a tube, in order to avoid irritation of the anus. The remedy produced most happy effects, since the doctor not only secured sound sleep, but gained at once in flesh and strength. The remedy was continued for some time in the same doses, but there was no difficulty whatever in relinquishing its use, as is so customary in cases where morphia is resorted to.—*Chicago Med. Jour. and Exam.*

Potassium Chlorate in Diphtheria.—Dr. A. SEELIGMUELLER regards a saturated solution of potassium chlorate as a veritable specific in diphtheria. He directs a tablespoonful of the following, nearly saturated, solution to be taken every hour, or every two hours:

℞ Potassium chlorate ..... 10 gm.
Water..... 200 "

In the early stages of the disease, it is to be administered every hour, afterwards every two, and finally every three hours. Children under three years are to receive half a tablespoonful at a time. It is to be given both day and night, without interruption. Care should be exercised lest the remedy produce stomachic disturbances, or retard the heart's action. As soon as any symptoms appear which point to either of these effects, it should at once be suspended.—*Journ. de Thérap.* and *L'Union Pharm.*

Atropia and Daturia are not Identical.—According to v. Planta's investigations, atropia and daturia were hitherto regarded as identical. Poehl's new researches (*Petersb. Med. Wochensch.*, 1877, No. 20) have, however, shown that they are chemically different. Atropia is optically inert; daturia turns the plane of polarization 14.12° to the left. Atropia salts are precipitated by platinic chloride, those of daturia are not; picric acid precipitates daturia, but not atropia.—*Pharm. Centralh.*, No. 40.

BIBLIOGRAPHY.

FIFTH ANNUAL REPORT OF THE SECRETARY OF THE STATE BOARD OF HEALTH OF THE STATE OF MICHIGAN for the Fiscal Year ending Sept. 30th, 1877. 8vo, pp. 503.

ALTHOUGH somewhat late in appearing, the reports of this board are always welcome, since they contain matter that concerns every citizen of the commonwealth to know. It is venturing little to say that such reports are the most profitable publications which can be issued by any State. Among the many papers contributed to this volume we will mention only the following as being of special interest to our readers: A number of papers relate to the Illuminating oils commonly consumed in Michigan. Prof. R. C. Kedzie contributes a paper on the Labelling of Medicines. Other papers relate to Trichiniasis, Heredity, Recreations and Health, Healthful Dwellings, Infant Diet, Treatment of the Drowned, Baths and Bathing, Water Supply, and Outbreaks of Zymotic Affections, etc. One of the most commendable features of the work done by this Board is the system of reports made by physicians throughout the State, and it is worthy of more extended imitation.

ARRANGEMENT OF DRUGS OF THE U. S. PHARMACOPŒIA ACCORDING TO THEIR NATURAL ORDERS, WITH HABITAT, DOSE, ETC., by F. MADISON MURRAY, PH.G., M.D.

THIS is a sheet 32×34 inches, arranged so as to show the following items: Natural Orders, Officinal Name, Plant, *Therapeutic Activity*, Part used, *Dose*, and Habitat. The sections here indicated in Italic are printed in red. The table will be of service to medical and pharmaceutical students in mastering the details of the information embraced in the scheme and may be bought of T. S. Wiegand, 145 N. 10th St., Philadelphia (Philad. Col. of Pharm.). 75 cents.

THE PHYSICIAN'S POCKET DAY-BOOK, by C. HENRI LEONARD, M.A., M.D. Detroit, 1878.

THE convenient pocket memorandum devised by Dr. Leonard has accommodations for keeping the account of charges for either 20 or 40 families weekly; an obstetrical record for 94 cases, and monthly memoranda for miscellaneous accounts. The book is handsome in appearance, light in weight, of convenient size, and offers a simple and convenient method for keeping a physician's accounts in such form as to reduce the labor of book-keeping to a minimum. The price is $1.00, with 25c. to 50c. additional for lettering in gold. Address, C. Henri Leonard, M.D., cor. of Gratiot and Woodward Aves., Detroit, Mich.

SCIENTIFIC MEMOIRS: BEING EXPERIMENTAL CONTRIBUTIONS TO A KNOWLEDGE OF RADIANT ENERGY. By JOHN WILLIAM DRAPER, M.D., LL.D., President of the Faculty of Science in the University of the City of New York, etc. New York, Harper & Brothers, 1878, 8vo, pp. 473, 100 illustrations.

IN a work which undertakes to give a summary of the researches and writings of so industrious an observer as Professor Draper, even upon a single subject, one would naturally expect to find a very considerable amount of matter, and this would especially be the case in the present instance, since the subject of heat and light and all that is connected with them, and embraced under the title of Radiant Energy, has been the chief study of the author for upwards of forty years. A work of this sort is therefore a sort of autobiography, and those whose tastes run in the direction of natural science will have the pleasure of finding here, not only a succinct statement of our knowledge regarding the subject, but they will also be able, in some measure, to appreciate the various stages by which the author accumulated his wisdom and cultivated his powers of observation.

Our space will not permit even a brief synopsis of the material contained in the thirty chapters; suffice it to say that the correlation of light and heat and the phenomena peculiar to both, photography, the spectrum, incandes-

cence of heated bodies, phosphorescence, the daguerreotype, the action of light on growing vegetation and chemical substances, capillary attraction, the properties of burning-glasses, etc., are but a few of the topics here referred to. Illustrations are both numerous and well chosen, and the style in which the work is written is easily comprehensible, and better adapted for general information than some of the titles of chapters would lead one to infer. Some of the papers on endosmosis, the properties of chlorine, microscopic photography, and the existence and effects of allotropism on the constituents of living bodies are most likely to interest our readers.

THE CELL DOCTRINE: Its History and Present State, for the Use of Students in Medicine and Dentistry. Also a Copious Bibliography of the Subject. By JAMES TYSON, M.D., Professor of General Pathology and Morbid Anatomy in the University of Pennsylvania, etc. Second Edition, Revised, Corrected, and Enlarged. Illustrated. Philadelphia, Lindsay and Blakiston, 1878, 8vo, pp. 202, price $2.00.

A WORK of this sort is not only needed by the student in medicine of the present day to supplement many of his text-books, in most of which the subject is considered from the standpoint of some years ago; but practitioners as well, whose opportunities have not allowed them to keep up with the progress of histology, will find the epitome of Professor Tyson a valuable aid. The author concludes his work with a chapter in which the present state of the cell doctrine is summed up. The bibliographic table, covering nearly fifty pages, seems to be quite complete, but the index, a feature of unusual importance in a work of this nature, is lamentably deficient.

ILLUSTRATED CATALOGUE OF SURGICAL INSTRUMENTS, Manufactured by SHEPARD & DUDLEY, New York. Pages 501 to 926 inclusive, price 50 cents.

THIS new fasciculus of the catalogue issued by Shepard & Dudley, of 150 William Street, has just reached us, and contains not only illustrations of many of the articles with lists of prices, etc., but also has descriptions of instruments and methods of employing them, taken from papers which have appeared from time to time in the medical journals. Persons having occasion to order instruments from a distance will find the catalogue of service to them, quite out of proportion to the nominal price charged for it.

MEDICINAL PLANTS, Being Descriptions with Original Figures of the Principal Plants Employed in Medicine, and an Account of their Properties and Uses. By ROBERT BENTLEY, F.L.S., and HENRY TRIMEN, M.B., F.L.S. $2.00 per part.

THE contents of the three parts of this work which have come latest to hand is as follows.

PART 32.—(48) *Pilocarpus pennatifolius*, or Jaborandi; (73) *Astragalus gummifer*, or Tragacanth; (93) *Copaifera Landsdorfii*, or Copaiba; (235) *Manihot utilissima*, or Cassava, the source of tapioca; (247) *Juglans cinerea*, the butter-nut of this country; (250) *Quercus alba*, the white oak; (251) *Quercus tinctoria*, the black oak; and (270) *Zingiber officinale*, ginger.

PART 33.—Contains (37) *Gossypium Barbadense*, cotton. This cut, which otherwise is beautiful, lacks a representation of the root, the bark of which is extensively used; (50) *Citrus vulgaris*, the bitter or Seville, or Bigarade Orange (see recent articles in NEW REM. by Mr. Rice); (53) *Citrus medica*, or citron; (97) *Prunus serotina*, or wild black cherry; (114) *Citrullus Colocynthis*, Colocynth; (130) *Dorema Ammoniacum*, the source of gum ammoniacum; and (166) *Statice Caroliniana*, the Marsh Rosemary or Sea Lavender.

PART 34.—Contains (144) *Coffea arabica*, coffee; (159) *Taraxacum officinale*, dandelion; (232) *Ulmus campestris*, elm; (233) *Ulmus fulva*, slippery elm; (234) *Salix alba*, white willow; (280) *Allium sativum*, garlic; and (298) *Saccharum officinarum*, sugar cane.

A review of the contents of these three parts will show that the interesting nature of the work is well sustained.

GEOGRAPHISCH-MEDICINISCHE STUDIEN, NACH DEN ERLEBNISSEN EINER REISE UM DIE ERDE. DR. A. WERNICH. Berlin, 1878, 8vo.

THE author, who was for three years professor of the practice of medicine and of gynæcology at the Japanese University of Tokio, gives an account of his experiences in the above work. Particularly interesting are the author's comments on the excellent Health-Board of the City of New York; also on the Hospitals and on the faults and defects of medical education in New York and elsewhere in the United States.

STUDIEN UEBER DIE QUALITATIVE UND QUANTITATIVE CHEMISCHE ANALYSE DER CHINA-ALKALOIDE mit Hilfe des Mikroskops und Polarisators. MATHIAS ROZSNYAY. Arad, 1878, 8vo.

THE author first discusses the usual analytical methods for separating and identifying the cinchona-alkaloids. All these methods, however, suffer from the defect that there is no reliable method known of completely separating—without loss—all the cinchona-alkaloids from each other. The author claims that by the use of the polariscope it is possible, not only to ascertain the presence or absence of one or the other alkaloid, but also to determine its quantity. An outline of his process will be found on page 18.

PRACTICAL SURGERY: Including Surgical Dressings, Bandaging, Ligations, and Amputations. By J. EWING MEARS, M.D., Demonstrator of Surgery in Jefferson Medical College, etc. With 227 illustrations. Philadelphia: Lindsay & Blakiston, 1878, 12mo, pp. 279, $2.00.

THIS is a brief summary of the *art* of surgery, well adapted for the use of students. Like too many works of its class, however, it seems to have been constructed on the model of its predecessors, and not from the practical knowledge of its author, since almost any young surgeon who has had a service of eighteen months in a surgical hospital of considerable size, could add an equal amount of matter in the way of practical hints regarding surgical manipulations and dressings, which do not appear to have occurred to the writer of this volume, and which rarely or never appear in works of this sort.

THE UNITED STATES HOMŒOPATHIC PHARMACOPŒIA. First edition. Chicago: Duncan Brothers, 1878, 8vo, pp. 281.

WHEN we consider the number of physicians in this country who are recognized as followers of Samuel Hahnemann, it is a matter for surprise that there has been issued no authoritative standard for their remedies. Several attempts, so it would appear, have been made to supply this want, but without success, and even now the homœopathic profession have to thank private persons for the enterprise and labor which have produced this first effort in the way of an authoritative work.

It is to be regretted that the work could not have had a more careful reading than it appears to have received, since numerous mistakes in nomenclature and orthography are to be detected, and the substance of the text itself is by no means beyond criticism. Nevertheless, the publishers are entitled to much credit for giving us even this, and we trust that the next edition will have the advantage of a careful revision.

THE AMERICAN QUARTERLY MICROSCOPICAL JOURNAL. Containing the Transactions of the New York Microscopical Society. Edited by ROMYN HITCHCOCK. New York: Hitchcock & Wall, 150 Nassau St., 8vo, 350 pp. (about) to the volume.

THIS new quarterly gives a favorable impression at the outset by its handsome typography, abundance of illustrations, and general evidence of careful editorial work. Examination shows the papers to be of a practical character and of a nature to render the journal a welcome addition to microscopical literature. The contents of the first number embraces the following articles: 1. The Sting of the Honey Bee, *J. D. Hyatt;* 2. Description of New Species of Diatoms, *H. L. Smith;* 3. Observations on Several Forms of Saprolegnieæ, *F. B. Hine;* 4. The Oil

Immersion of Zeiss compared with the Objectives of C. A. Spencer and Sons, *Prof. H. L. Smith;* 5. The Microscopical Examination of Fibres, *Prof. W. H. Seaman;* 6. Emigration in Passive Hyperæmia, *Dr. W. T. Belfield;* 7. A new Device for Dark-Field Illumination, *Prof. Wm. Lighton;* 8. On the Spore-Formation of the Mesocarpeæ, *E. Percival Wright;* 9. On the Structure of Blood-Corpuscles; 10. A Standard Micrometer; 11. Angular Aperture Defined.

The editorial matter contains a number of interesting abstracts. The "Digest of Current Literature" will be found to be of especial value to those who pay attention to subjects related to microscopy. Seven full-page lithographic plates and a number of good woodcuts are used in the illustration of the first number.

SORE THROAT; ITS NATURE, VARIETIES, AND TREATMENT; Including the Connection between Affections of the Throat and Diseases. By PROSSER JAMES, M.D., M.R.C.P., etc. Third edition, illustrated with hand-colored plates. Philadelphia: Lindsay & Blakiston, 8vo (small), pp. 288.

THE author is one of the physicians of the London Hospital for Diseases of the Throat, and embodies in this work the experience acquired in that very extensive field of practice as well as in private circles. Former editions of the work have met with considerable favor, and this one is well entitled to similar consideration.

ON REST AND PAIN: A Course of Lectures on the Influence of Mechanical and Physiological Rest in the Treatment of Accidents and Surgical Diseases, and the Diagnostic Value of Pain, delivered at the Royal College of Surgeons of England in the years 1860, 1861, and 1862, by JOHN HILTON, F.R.S., F.R.C.S., etc. Edited by W. H. A. JACOBSON, F.R.C.S., etc. Second edition, republished by William Wood & Co., of New York, 1879, 8vo, pp. 299, 109 woodcuts.

THIS is the first in the series of "Wood's Library of Standard Medical Authors," a notice of which appeared in our last volume. It will, without doubt, be one of the most instructive books that can be put into the hands of the majority of physicians throughout this country. Although its merits have for some time been highly appreciated by a considerable number of readers, it is by no means so well known as it deserves.

We doubt if any one who has obtained it in the English edition has ever regretted the outlay, and the enterprise of the firm which enables it to be supplied at the merely nominal sum of one dollar deserves much encouragement.

NOTES ON THE TREATMENT OF SKIN DISEASES. By ROBERT LIVEING, A.M., M.D., etc. Fourth Edition, revised and enlarged. New York: William Wood & Co., 1878, pp. 127.

BESIDES some additional suggestions regarding the therapeutics of skin affections, this edition has been provided with an index. The contents embraces chapters on Morbid Anatomy, Etiology, Diagnosis. Classification, an alphabetical arrangement of Skin Diseases with their Treatment, Diseases of the Nails, Definitions of Terms and Formulas.

Although the book is not a large one, it embraces quite all that is likely to demand attention in the course of a practice of medicine, and is well calculated to render valuable service to its possessor.

LECTURES ON BRIGHT'S DISEASE OF THE KIDNEYS. Delivered at the School of Medicine of Paris by J. M. CHARCOT, Professor in the Faculty of Medicine of Paris, etc. Collected and published by Drs. BOURNEVILLE and LEVESTRE, Editors of the *Progrès Médical*, and translated, with the permission of the author, by HENRY B. MILLARD, M.D., A.M. New York: William Wood & Co., 27 Great Jones St., 1878, 8vo, pp. 100, with two colored plates and eighteen woodcuts.

PROFESSOR CHARCOT is, without doubt, one of the ablest authorities of the present day in clinical medicine, and his writings well sustain the reputation of his school which, of late years, has been less prominent than a generation ago, owing to the multitude of writers in German medical centres. Indeed, a perusal of the present work shows how valuable have been the contributions of the latter to this special field of research, as well as the completeness of the knowledge with which the writer approaches the subject. Being arranged in the form of lectures, the most salient points have received the greatest share of attention, and the work will prove acceptable to a wide circle of readers who have been unable to keep pace with the progress which has been made in the differentiation of kidney-affections since they were described by Dr. R. Bright, fifty years ago. The colored plates copied from the original ones of Dr. Bright will prove not only valuable in connection with the text, but also of interest as evidences of the accuracy of his observations.

A MONOGRAPH ON THE TREATMENT OF DIPHTHERIA. Based Upon a new Etiology and Pathology. By WILLIAM C. REITER, A.M., M.D. Philadelphia: J. B. Lippincott & Co., 1878, 8vo, pp. 47.

AN abnormal quantity of fibrine in the blood is the proximate cause which the author believes to underlie diphtheria, and his treatment consists in the use of calomel in moderately large doses at short intervals until the fecal movements become decidedly green, and in appearance like the green, vegetable, glutinous matter sometimes found in wooden watering troughs in the country.

LECTURES ON LOCALIZATION IN DISEASES OF THE BRAIN. Delivered at the Faculté de Médecine, Paris, 1875, by J. M. CHARCOT, Professor, etc. Edited by BOURNEVILLE; Translated by EDWARD P. FOWLER, M.D. New York: William Wood & Co., 1878, 8vo, pp. 133, 45 figures.

THIS is, without question, one of the most important subjects under consideration by pathologists of the present day, and the publication of Professor Charcot's lectures thereon meets a very general want. The work is quite comprehensive, is well edited, and will prove to be very instructive to the majority of readers.

A MANUAL OF PHYSICAL DIAGNOSIS by FRANCIS DELAFIELD, M.D., and CHARLES F. STILLMAN, M.D. New York: William Wood & Co., 1878, pp. 30, interleaved with colored plates.

THE author is esteemed very highly as a clinical teacher and as an authority on the subject of physical diagnosis, his opportunities in the wards and pathological rooms of Bellevue Hospital having probably been unsurpassed in this country. The work is admirably adapted, excepting as regards its size, for the use of clinical students, but this feature was rendered necessary by the handsome dissected plate, printed in colors and having overlying sheets of translucent muslin upon which the front and rear surfaces of the chest and abdomen are printed in black, thus aiding the observer to determine the normal location of organs contained in the thorax and abdomen.

THE ANATOMICAL REMEMBRANCER; OR, COMPLETE POCKET ANATOMIST: Containing a Concise Description of the Bones, Ligaments, Muscles, and Viscera; the Distribution of the Nerves, Blood-vessels and Absorbents; the Arrangement of the Several Fasciæ; the Organs of Generation in the Male and Female, and the Organs of the Senses. Eighth edition. New York: William Wood & Co., 1878, pp. 297.

THIS has been one of the most successful of the books of its class, being comprehensive, accurate, and very convenient in size. There are now so few medical schools in this country where it is not in use that an extended notice is not called for.

DISEASES OF THE BLADDER AND URETHRA IN WOMEN, by ALEXANDER J. C. SKENE, M.D. New York: William Wood & Co., 1878, 8vo, pp. 374, with 36 figures.

PROFESSOR SKENE is already known in this country through his contributions to the *American Journal of Obstetrics*. In Brooklyn, where he resides, he is without doubt at the head of the specialists in gynecology, and has for a number of years possessed abundant opportunities for becoming familiar with the subject of which this work

treats. The fact that the usual chapter on vesico-vaginal fistula, presented in most works on gynecology, does not cover all the affections peculiar to the female urinary apparatus—some of which are exceedingly painful and annoying—must have occurred to many others besides Professor Skene, and the publication of this work will supply a deficiency that has long remained unfilled in this country.

The chapters embrace, roughly enumerated, the following topics: Anatomy and Malformations of the Bladder and Urethra, Functional Diseases of the Bladder, Organic Diseases of the Bladder, Cystitis, Tumor of the Bladder, Foreign Bodies in the Bladder, Hypertrophy and Atrophy of the Bladder, Diseases of the Urethra, such as inflammations, neoplasms, vascular tumors, etc., Dislocations, Displacements, and Prolapsus of the Mucous Membrane, and Foreign Bodies in the Urethra, Stricture and Fistula.

The work evidently had its origin in the course of lectures which its author has been accustomed to deliver in the Long Island College Hospital, such historical notices, quotations, and discussions of special topics as would be appropriate to a published treatise having been added.

Announced for Early Publication.

Stillé (A.) and **Maisch** (J. M.). The National Dispensatory. Containing the Natural History, Chemistry, Pharmacy, Actions, and Uses of Medicines, and including the Preparations of the Pharmacopœias of the United States and Great Britain. By ALFRED STILLÉ, M.D., LL.D., Prof. of Theory and Practice of Med., and of Clinical Med. in the University of Pennsylvania, etc., and JOHN M. MAISCH, PH.D., Prof. of Mat. Med. and Secretary of the Am. Pharm. Association. With 205 illustrations. In one handsome octavo volume of 1,400 pages.

PAMPHLETS RECEIVED.

THE LOCAL TREATMENT OF ECZEMA. By HENRY G. PIFFARD, M.D., 8vo, pp. 8. Reprint from *The Medical Record.*

NOTES ON THE TREATMENT OF CONSUMPTION WITH THE SYRUP OF THE HYPOPOSPHITES, collated from various sources by J. A. MCARTHUR, M.D. Boston, pp. 32.

THE CONSTITUENTS OF CLIMATE, with Special Reference to the Climate of Florida. By FREDERICK D. LENTE, A.M., M.D., 8vo, pp. 56. Reprint from the *Richmond and Louisville Med. Jour.*

CASE OF SARCOMA OF THE KIDNEY IN A NEGRO CHILD, by W. H. GEDDINGS, M.D., of Aiken, S. C. 8vo, pp. 3, with plate. Reprint from Vol. II., *Gynecolog. Trans.*

HOSPITAL FORMULARY for the Use of the Department of Public Charities and Corrections of the City of New York. Edited by CHARLES RICE. Department Press, 1878, pp. 72.

ECONOMIC GEOLOGY IN ALABAMA.—Report on the Minerals of Alabama, exhibited at the Fifth Annual Fair of the Mobile Agricultural, Horticultural, and Mechanical Fair Association. By CHARLES MOHR, Sup't. Geological Department. Mobile, 1878, 8vo.

THE FORESTS OF ALABAMA AND THEIR PRODUCTS. Alabama, 8vo.

THE GRASSES AND OTHER FORAGE PLANTS OF ALABAMA. 8vo. By the same.

ACUTE FATTY DEGENERATION OF THE NEWLY-BORN. By MARY PUTNAM-JACOBI, M.D. Reprinted from the *American Journal of Obstetrics.* 8vo, pp. 16.

SEVENTH ANNUAL CIRCULAR OF THE NATIONAL COLLEGE OF PHARMACY. City of Washington. Seventh Session, October, 1878, to March, 1879.

THE TREATMENT OF THE GENITO-URINARY ORGANS, THE USE OF ELECTRICITY, DAMIANA, ETC. By JOHN J. CALDWELL, M.D., of Baltimore, Md. Reprinted from the St. Louis *Med. and Surg. Jour.* 8vo, pp. 8.

NEW PATENTS.

[*The following list is compiled from official sources, especially for* NEW REMEDIES, *by S. H. Wales & Son, Solicitors of Patents, 10 Spruce St., New York, who will furnish gratis to subscribers any information relating to this department.*]

PATENTS GRANTED DURING OCTOBER, 1878.

October 1st, 1878.

Alumina, manufacture of sulphate of, F. Laur....208,615
Bottle-stopper, S. Oakman 208,487
Bottle-stopper, W. G. Steinmetz.....208,647
Capsules, machine for cutting off gelatine, F. A. Hubel (R)..... 8,440
Evaporator, Porous, W. Galloway..... ...208,471
Gas, manufacturing illuminating, J. Schackleton..208,641
Gloves for surgical operations, manufacture of, T. Forster.....208,586
Hog-cholera compound, T. Arnold.....208,505
Hog-cholera compound, G. S. Williams.....208,504
Iron from phosphorus, freeing molten, H. Schulze-Berge and J. Barnstorf.....208,561
Lime, to produce caustic lime, for treating gas, A. W. Wilkenson.....208,656
Rubber in sheets for dental and other uses, packing and putting up, E. R. Mullett.....208,484

October 8th.

Bath, portable shower, D. Desbon.....208,720
Bathing apparatus, steam, vapor, and medical, J. De Beer.....208,666
Bottle-stopper, G. G. Newton..... 208,690
Gas meter, A. Levy 208,686
Gas retort, W. F. Browne.....208,710
Lubricant, W. H. Smith & M. C. Osborn.....208,697
Truss, G. France.....208,805
Truss, W. L. Tucker.. 208,869

October 15th.

Carburetter, air, G. Reznor.....209,076
Dental foil, package for transmission of, R. S. Williams.....209,002
Dental plugger, electro-magnetic, W. G. A. Bonwill..... 209,006
Hog-cholera compound, M. Hemmingway.....208,975

October 22d.

Gas, manufacturing, J. A. Stephan.....209,304
Injector, J. E. Bott.....209,220
Syringe, W. T. Reaser.....209,292

October 29th.

Alum-cake and sulphate of alumina, manufacture of, G. T. Lewis..... 209,488
Bath, hot atmosphere and medicated, G. M. Baronidis..... 209,319
Bottle-stopper, W. H. Dabbs.....209,466
Bottle-stopper and fastener, P. Madlener.....209,490
Gas, apparatus for carburetting illuminating, J. F. Otten and J. Kluber.....209,505
Gas, purifying, H. W. Merrit.....209,350
Hair-tonic, A. and T. Emig..... 209,335
Medical compound, L. Daniel.....209,331

TRADE MARKS REGISTERED DURING OCTOBER, 1878.

Medicinal Preparations.

6,635. Cousseno & Tabler, Nashville, Tenn. The word-symbol "Honey of Tar."

6,650. James F. Orebaugh and William I. Gardner, Camden, Ohio. The figure of the world centrally arranged, and the initials T. W. M. W. and O. & G. surrounding the same.

6,654. Matthew Palen, San Bernardino, Cal. The two hearts with the dove above them, substantially as shown.

6,659. Channing White, San Francisco, Cal. The word symbol "Prairie Flower," and the pictorial representation of an Indian girl.

6,660. Williams & Moore, Stockton, Cal. The words or title "Williams & Moore's," the word-symbol "National," and the cut or figure of the man and flag.

6,662. Ernest D. Pape, New York, N. Y. The figures of Hercules and Hebe, with the Latin words, "In Sanguine Salus," and the word-symbol "Hæmaline," as shown.

6,666. William E. Jervey, New York, N. Y. The figure of a human head (male or female) presenting a front face or practically full-face view, and showing the hair on one side of the head as abundant and tastefully arranged, while the other side of the head is nearly or quite devoid of hair.

6,668. Paul B. Bradlee, Brooklyn, N. Y. The arbitrarily selected word-symbol "Aliciana."

6,669. William F. Caterson, Philadelphia, Pa. Two crowned and winged dragons, supporting a shield between them, the whole resting on a sub-platform, while on the shield is a bar, crossing its surface diagonally as shown.

6,681. Melville E. Mead, Darien, Ct. The arbitrary words "Mother Marteens."

6,699. William Rockwell & Co., Jacksonville, Ill. The arbitrarily selected word "Columbian."

6,700. Lusian E. Shipman, Providence, R. I. A symbol of a ship in full sail, in connection with the letters "man's" arranged as shown.

6,712. Indian Cordial Company, New Orleans, La. A monogram formed of the initial letters "I. Co. Co." of our firm name, which monogram is placed inside of a letter O, of circular shape.

6,714. D. D. Perraud, Lyons, France. The symbol-words "Baume Irlandis," and the emblem of an Irish harp.

6,743. Sheley & Roberts, Detroit, Mich. The arbitrarily selected letters "A and Z," arranged in a monogram, and the Latin words "Pro Bono Publico."

6,752. Channing White, San Francisco, Cal. The name "The Dr. Aug. Kaiser," and the representation of the bird, as shown.

6,753. Benjamin R. Buckwater, New York, N. Y. The word-symbol "Gandaline."

6,767. John R. Planten, Brooklyn, N. Y. The figure of a shield, and the representation of three trees or plants thereon.

Soaps, Perfumery, etc.

6,687. James Touzeau Sanders, London, England. The letters "J. T. S." arranged in the form of a monogram, and also my autograph signature "J. Touzeau Sanders."

6,719. John T. Lauman, New London, Ct. The word-symbol "Regatta."

6,738. Christian Pauly, Jersey City, N. J. The word-symbol "Peruvian," and the pictorial representation of a shield.

6,751. Francis Treukamp, Milwaukee, Wis. The arbitrarily selected word "Monitor," and the figure of a monitor.

6,758. A. & M. Laudon, Paris, France. The smaller and oblong eight-sided member inclosing the signature, and the two geometrical figures, and their inclosed monograms, and the larger member having the three columns, and the escutcheon, monogram, or interlaced letters, figure of Mercury, female figure, clouds, and phrase, "Au Temple de Flore."

6,759. Selah R. Van Duzer, New York, N. Y. The arbitrarily selected word "Floral Bell."

6,760. Selah R. Van Duzer, New York, N. Y. The fanciful title "Bridal Bouquet Bloom."

6,762. Albert L. Calder, Providence, R. I. The word "Dentine."

CARBOLIC ACID AND CREOSOTE.

BY HENRY B. PARSONS.

It is difficult to find creosote which has not been mixed with more or less of carbolic acid, and the writer has known of instances where the so-called creosote was nothing but crude carbolic acid. In fact, many dealers entertain the idea that the two substances are identical, and that it is proper to substitute one for the other at pleasure. On the other hand, the conscientious pharmacist, who desires to sell what is prescribed, is often at a loss to determine whether or not his creosote and carbolic acid are really true to name and pure. It is hoped that this article may help him to settle these questions. Tests innumerable have been published, but many are practically valueless; first, because the authors have not experimented upon pure creosote and carbolic acid; second, because the conditions necessary for the success of the tests have not been explicitly stated; and third, because the action of a particular reagent has been stated for one substance only, when, upon trial, its behavior is found to be very similar with the other. In the following table will be found some of the principal properties and reactions which serve for the identification and separation of carbolic acid (phenol) and creosote: explanations will be given below.

Reagents, etc.	*Phenol.*	*Creosote.*
1. Symbol.	C_6H_6O.	$C_8H_{10}O_2 + C_7H_8O_2$.
2. Physical state.	Colorless crystals.	Colorless liquid.
3. Spec. gravity.	1.065.	1.035 to 1.085.
4. Melting point.	34 to 35° C.	27.2° C.
5. Boiling point.	182 to 186° C.	200 to 225° C.
6. Reaction.	Neutral.	Neutral.
7. Odor.	Slight.	Smoky.
8. Polarized light.	Inactive.	Rotates to right.
9. Much water.	Soluble in 20 pts.	Soluble in 80 pts.
10. Little water.	Dissolves 3 pts.	Dissolves 3 pts.
11. 2 vols. 20% ammonia.	Soluble.	Insoluble.
12. Anhydrous glycerin.	Soluble.	Soluble.
13. Common glycerin.	Soluble.	Insoluble.
14. Collodion.	Coagulated.	Not coagulated.
15. Ferric salts to water sol.	Dark purple.	Blue purple.
16. Ferric salts to alcohol sol.	Brown color.	Green color.
17. Bromine to water sol.	White prec.	White prec.
18. Ammonia + bromine.	Dark-blue color.	Light blue-green color.
19. Ammonia + hypochlorite	Dark-blue color.	Light blue-green color.
20. Mercurous nitrate.	Blood-red color.	Amber to blood-red color.
21. Nitric acid.	Yellow color.	Yellow color.
22. Ammonio-cupric sulphate	Green color.	Green color.
23. Molybdic+sulphuric acids.	Purple color.	Brown color.
24. Sulphuric + nitric (trace).	Magenta.	Pink.

Explanations will be given in the above order.

1. "Carbolic acid" is not properly classed among acids, since it forms no definite salts with bases; it is an alcohol (*i. e.*, the hydrate of an organic radicle). It does not liberate carbonic anhydride from carbonates, and may be distilled either from acids or alkalies (Watts' Dict.). Creosote consists mainly of creosol ($C_8H_{10}O_2$) and guaiacol ($C_7H_8O_2$). If made under certain conditions, a *trace* of phenol may be normally present.

2, 9, 10. Phenol is colorless when pure, but as usually sold has a slight pink color, due to impurities; this pink color is promoted by exposure to sunlight. A very pure

phenol may be prepared by heating salicylic acid in a retort with half its weight of quicklime; the reaction is

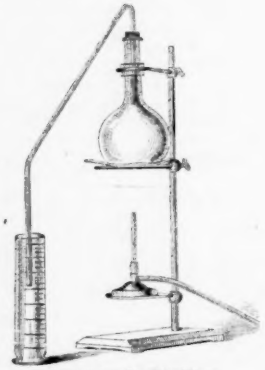
$$\begin{matrix} \text{Salicylic acid} & + & \text{Lime} & = & \text{Phenol} & + & \text{Calcium carb.} \\ C_7H_6O_3 & + & CaO & + & C_6H_5OH & + & CaCO_3 \end{matrix}$$

The phenol distils over and condenses into crystals. Creosote is often contaminated with tarry matters which give it a color varying from amber to brown; a red color is strongly suggestive of carbolic acid.

3, 4, 5. The specific gravity of creosote varies greatly for different samples; the figures given show extremes. Carbolic acid is solid at common temperatures, while creosote cannot be readily frozen. If an aqueous solution of carbolic acid be heated with a lump of fused chloride of calcium until the acid begins to volatilize, and the dish be then cooled in ice water, the acid will form beautiful needle-shaped crystals; this test gives negative results with creosote. Although the boiling point of creosote is higher than that of carbolic acid, it will pass over first when distilled with steam, and may be entirely vaporized on the water-bath, while phenol remains.

7. The odor of creosote is much more smoky and disagreeable than the odor of phenol. Beech-tar creosote differs in odor from pine-tar creosote.

9, 10. If phenol does not dissolve in 20 parts of water the insoluble portion is impurity. Both phenol and creosote take up a little water; the phenol is liquefied, but becomes turbid by addition of more water, and becomes clear again when 20 parts of water have been added. Creosote is turbid from the first.



Apparatus for Distilling.

11, 12, 13, 14. These reactions are very valuable in determining the question whether creosote is real or fictitious. A very slight amount of glycerin serves to liquefy a pound of phenol, and the two substances are miscible in all proportions; hence phenol may be separated from adulterated creosote by shaking with glycerin of U. S. P. strength. The phenol may be partially separated from the glycerin by shaking with chloroform. Upon evaporating the chloroform the phenol remains, and may be identified by tests. Glycerin containing no water dissolves creosote readily. Reaction 11 is very distinctive; stronger ammonia (U. S. P.) may be used.

15. One part of phenol or creosote in 100 measures of water is the best strength for this test. To a test-tube half full of the water solution add one drop of ferric chloride. The purple color with carbolic acid does not change on standing, while the solution containing creosote soon becomes turbid; upon standing over night a scanty brown precipitate falls, and the liquid becomes nearly or quite colorless. With dark-colored creosote, containing tarry products, the brown precipitate is more bulky, instantly formed, and the blue color often not visible.

16. One part creosote or phenol to 100 of alcohol. To half a test-tube full add 4 or 5 drops of ferric chloride. The reaction is quite marked, and the colors deepen on standing.

17. Bromine water precipitates from solutions of phenol tribromo-phenol ($C_6H_3Br_3O$). Two methods have been devised for the volumetric estimation of phenol by free bromine; see *Analyst*, 1877, p. 116, and *Jour. Chem. Soc.*, Nov., 1878, p. 918.

With creosote solutions the precipitate has the same appearance, but is probably a mixture of several substitution products.

18, 19, 20. Four volumes phenol (or creosote) with one volume of ammonia treated with bromine vapor, or with a few drops of a solution of chlorinated lime (1:20) gives the colors indicated. If the amounts of phenol or creosote present are very slight, the color will be greenish; addition of acids causes a pink coloration.

The reaction with mercurous nitrate is probably the most delicate, but it gives colors with creosote so similar to those with phenol that it hardly serves to distinguish them; it reacts with phenol, however, in more dilute solutions. Salicylic acid gives the same color.

21. With phenol nitric acid forms chiefly trinitro-phenol ($C_6H_3(NO_2)_3O$) known as picric acid; the yellow color is very intense, visible in very dilute sulutions. With creosote a yellow color.

22. With morphia the same green color (*Chem. News*, Aug. 9th, 1878, p. 65).

23. This new test was introduced by E. W. Davy (*Chem. News*, Oct. 18th, 1878, p. 195). One part of molybdic acid is dissolved by heating in ten parts of sulphuric acid. Pour ten drops of this liquid into an evaporating dish, and add carefully one or two drops of a dilute water solution of creosote or carbolic acid. Upon standing a few minutes, or by warming *very slightly*, a beautiful purple color appears if carbolic acid was present, and a brown color with creosote, becoming lighter on heating. In a mixture of carbolic acid and creosote he recommends to mix them with a little water in a flask fitted with a bent delivery tube (see cut), and heat to boiling on a sand-bath. The creosote first distils and may be tested; later the carbolic acid comes over. In this way he claims to have detected one per cent of carbolic acid in creosote. Many other organic substances give characteristic colors with this reagent, it being used to distinguish many alkaloids. Almost any vegetable substance, especially if decomposing, reduces the molybdic acid, with formation of a blue color, so care must be taken that they be absent. Molybdic acid, also, is very apt to contain some nitric acid which modifies the colors in this test. If the nitric acid is first expelled by boiling with sulphuric acid, the reaction is quite sure to succeed.

24. Equal weights of sulphuric acid and phenol are mixed; if to a few drops of this mixture a single drop of a liquid, containing a mere trace of nitric acid, is added a beautiful magenta color appears. This color is changed to green by excess of potassic or ammonic hydrate, and again to red by excess of sulphuric acid. Excess of water prevents the color, which reappears on evaporation: excess of phenol causes a brown coloration; and excess of nitric acid prevents the magenta, and causes a yellow color, instead of green, on addition of caustic alkalies. This test is chiefly intended for the detection of traces of nitric acid, but serves to show carbolic acid, or creosote, in unknown mixtures. It does not distinguish between the two very sharply, and requires considerable experience (*Ch. News*, Jan. 4th, 1878, p. 3.)

The reactions given are those which have proven most reliable in my own practice; fuller explanations of some of them may be found in the various text-books and magazines, and in back numbers of NEW REMEDIES.

Metallic Tungsten, chemically pure, is now manufactured in Hanover at a very low price.

Perfumery.—The first invoice of perfumery ever shipped from the United States to England was despatched from Philadelphia in August.

NOVELTIES.

Miles' Combination Shaving Cup.

THIS new addition to the list of druggists' sundries consists of two cups of lacquered wood and a lather-brush with hollow handle to hold the bristles when not in use. The empty water mug forms a cover for the soap box, and the brush is held by the metal rings which serve likewise

Closed.

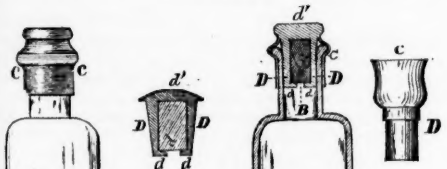
In use.

as handles for the mugs. The article is especially well adapted for the use of travellers, being compact, convenient, light, and strong. It is not, like porcelain, liable to break, nor, like metal, capable of being crushed and dented.

Miles Bros. & Co., of 102 Fulton St., New York, have it for sale at $30 per gross; its retail price being about 75 cents.

A New Stopper for Bottles.

PATENT 8,382 recently renewed to Eldridge Harris of Boston, Mass., is well adapted for use in pocket-cases where the liability of liquids to escape by capillary attraction and in consequence of the elasticity of air in the vial which has



been compressed by forcing in a closely-fitting cork, is often the source of trouble, and leads to waste and soiling the interior of the medicine-case.

This stopper has a core of wood (B) inclosed by an india-rubber casing (D D), and an apron (C) attached to the top of the stopper for surrounding the neck of the vial, as represented. In using the stopper, the outside casing is first reflected over the top and then, after the stopper is in place, it is turned back into the position shown on the left.

Dudley's Emulsion of Pure Norwegian Cod-liver Oil, etc.

THE label and circular accompanying the sample of this emulsion, which we have received, state that it contains no alkali, no gum arabic, tragacanth, albumen, or saccharine matter; that it will not ferment nor become rancid; and that it will remain permanent for any time. One fluid ounce is represented to contain 6 grains of pancreatine, 16 grains of lactophosphate of lime, 25% of glycerin, and 50% of Norwegian cod-liver oil, emulsionized with Irish moss jelly.

On examination we find the emulsion to be extremely well made, and to have as palatable a taste as can probably be imparted to such preparations. While we, for our part, think that pure cod-liver oil is much preferable to any mixture that can be made of it, we have no doubt that those who prefer to use the oil in form of emulsion will find the above as good as any other in the market.

The Secrets of a Bushel Measure.—In the reports of the Standard Weights and Measures Department of the Board of Trade, recently issued, there is some curious information respecting the variable results obtainable in the measurement of dry goods. The Weights and Measures Act, passed last session, expressly prohibits "heaped measures," and requires that the measure shall be filled as nearly level as the size and shape of the articles measured will permit. This led to some experiments as to the results following different modes of "striking" a measure, *i..e.*, of bringing the level of the contents of the measure into the same horizontal plane as the brim.

A sample of corn was taken and the true weight of a standard bushel of it was ascertained to be 57 lbs. 2 ozs. But when the ordinary flat strike is used, the corn left in the measure weighs 57 lbs. 3 ozs., whilst if the ordinary round strike or roller be used, the quantity of corn is increased to 57 lbs. 9 ozs. If the measure be shaken when struck with a round roller, the weight rises to 62 lbs. 15 ozs.

The diameter of a vessel, in proportion to its depth, appears to make little difference in measuring grain, unless the diameter is less than one-third of the depth. The Board of Trade standard measures for dry goods, the bushel, half bushel, and peck—have their diameter nearly double their depth, whilst those for liquids have their diameter nearly equal to their depth. But it is found that, particularly in the sale of such articles as coke, potatoes, etc., the proportions adopted in the standards for dry goods are those most likely to give just results.—*Pharm. Journ. and Trans.*

Wooden Corks.—These new corks are not the hard, rigid things that their material would suggest. The wood for the purpose is first made soft and pliant by being deprived of its resinous and glutinous qualities, just the particular qualities which make its cellular tissue rigid and unyielding. Thus the wood is made soft like the cork, and probably more useful in its greater power of resisting acids. The method of softening the wood is just the secret of the inventor. But there seems to be something real in it, as a factory has already been erected at Sonoma for the manufacture of the new cork, and is daily sending out considerable quantities of them. The new manufacture has been subjected to severe tests which it has stood well, and the corks are produced in this way at half the ordinary cost. The invention is sufficiently important to encourage the hope of its becoming a commercial success if half the good things said of it are true. It is not to be supposed that the cork-bark of commerce is about to be superseded, for it is applicable to many other purposes besides making stoppers for bottles.

PRESCRIPTIONS AND FORMULÆ.

Method of Administering Damiana.—It is said that this drug is best given in infusion, as follows:

Damiana, leaves and flowers	2 ozs.
Licorice [root ?] not bruised	¾ oz.
Boiling water	16 ozs.

Macerate for eight hours in a covered vessel, and strain. Dose 2 to 4 ounces.

Formulas for giving Medicines to Children.—

℞ Quiniæ sulph.	gr. xvi.
Acidi tannic.	gr. ij.
Ol. menthæ pip.	gtt. iij.
Syrupi sarsaparillæ co.	℥ ij.

M. S. Dose, one teaspoonful. Shake the bottle before using.

Syrup of chocolate, such as is used at soda fountains, completely conceals the taste of quinine.

An agreeable formula for giving iron to children:

℞ Ferri et potassii tart.	℥ ij.
Aquæ cinnamomi,	
Syrupi simpl.	āā ℥ iss.

M. et ft. solutio.

S. Dose ½ to 1 teaspoonful between meals and at bedtime.—D. S. CLARK, Rockford, Ill.

Collodium iodoformiatum (Moleschott).—

Iodoform	1 part.

Triturate it fine, add it to

Collodion	15 parts,

and dissolve it by shaking and macerating.

Recommended in lymphatic swellings, enlargement of spleen, orchitis, pericarditis, and as an analgetic in gouty swellings.—*Pharm. Centralh.*, No. 40.

Purgative Milk.—Planche's formula is said to be easy to take and certain in action. It is as follows:

℞ Resinæ scammonii	gr. vi.
Sacch. alb.	℥ iiss.

Tere et adde gradatim:

Lactis pur.	℥ vi.
Aq. Laurocerasi	♏xlv.

Iodized Collodion (Parmentier).—

Ether	63 parts.
Iodine	11 "

Introduce into a flask and shake until dissolved, then add

Alcohol	22 parts.
Castor oil	7 "
Gun-cotton	7 "

Mueller's Fluid.—This is used for preserving anatomical specimens. It consists of 2 to 2.5 parts of potassium bichromate, 1 part of sodium sulphate and 100 parts of water.

Artificial Mineral Waters.

(Continued from page 371, Vol. VII.)

16. *Spaa. Pouhon.*

		To make 480 troy ounces.	
Sodium carbonate	sol.	225.5	grains.
" chloride	"	91	"
" phosphate	"	7.35	"
Potassium carbonate	"	18.8	"
Alum. and sod. sulph.	"	4.7	"
Calcium chloride	"	4.17	"
Calcium carbonate		29.5	"
Magnesium carbonate		55.4	"
Iron (proto-) sulph., gran.		5	"
Iron, reduced		8.8	"
Distilled water		229,954	"
Carbonic acid		4	volumes.

17. *Vichy. Source des Célestins.*

		To make 10 litres.	
Sodium carbonate	sol.	373.34	grammes.
" phosphate	"	9.10	"
" chloride	"	9.26	"
" silicate	"	12.04	"
Potassium carbonate	"	21.74	"
Magnesium sulphate	"	24.28	"
" chloride	"	5.10	"
Strontium chloride	"	0.42	"
Calcium chloride	"	35.60	"
Iron (proto-) sulph., gran.		0.07	"
Sodium arseniate, dry		0.02	"
Distilled water		9,509	"
Carbonic acid		3.5	volumes.

18. *Vichy. Source de la Grande-Grille.* Temp., 43° C.

		To make 10 litres.	
Sodium carbonate	sol.	354.83	grammes.
" phosphate	"	13.0	"
" arseniate (1/100 %)	sol.	2.0	"
" chloride	sol.	11.8	"
" silicate	"	14.23	"
Potassium carbonate	"	24.24	"
Magnesium sulphate	"	24.3	"
" chloride	"	5.16	"
Strontium chloride	"	0.25	"
Calcium chloride	"	33.4	"
Iron (proto-) sulph., gran.		0.07	"
Distilled water		9,516.7	"
Carbonic acid		4	volumes.

It will be found advantageous to prepare this of double the above strength; that is, taking all the ingredients except the water in double the quantity—leaving, however, the sodium silicate out—and using 9,037.2 grammes of water. For use, it is to be diluted with an equal volume of warm water.

19. *Wiesbaden. Kochbrunnen.*

		To make 10 litres.	
Sodium chloride	sol.	632.49	grammes.
" phosphate	"	0.04	"
" silicate	"	12.10	"
" carbonate	"	36.	"
Potassium chloride	"	14.30	"
Ammonium chloride	dry	0.17	"
Potassium bromide,	"	0.04	"
Calcium sulphate,	cryst.	1.05	"
Calcium chloride	sol.	94.14	"
Magnesium choride	"	21.74	"
" sulphate	"	0.08	"
Aluminium chloride	"	0.046	"
Lithium carbonate,	dry	0.002	"
Iron (proto) sulph., gran.		0.134	"
Sodium arseniate	dry	0.001	"
Distilled water		9,187.7	"
Carbonic acid		3.5	volumes.

20. *Wildungen. Stadtbrunnen.*

		To make 480 troy ounces.	
Sodium carbonate	sol.	222.3	grains.
" chloride	"	21.3	"
Magnesium sulphate	"	90.6	"
Calcium carbonate,	dry	113.28	"
Magnesium carbonate,	cryst.	125.25	"
Alum and sod. sulph.,	sol.	12.	"
Iron (proto-) sulph. gran.		10.	"
Manganese carbonate		1.57	"
Distilled water		229,804	"
Carbonic acid		4	volumes.

Tar Bandage is a dressing which Dr. C. B. Leitner, of Georgia, uses as a surgical dressing. The ointment with which it is made is prepared as follows: Fresh pine tar is put into a glass vessel which is placed into a pot

containing boiling water. After half an hour, the vessel of tar is set aside until all the foreign matter is precipitated, then it is decanted, and one part of sweet oil is added to twenty parts of tar.

Blenorrhœa-Boluses (Simonnot).—

Copaiba	200 grammes.
Cubebs, powd.	590 "
Japan wax	90 "
Krameria, powd.	70 "
Magnesium carbonate	50 "

Mix the powders, melt the wax and add to it the balsam of copaiva; then incorporate the powders and divide the mass into boluses of 1 gramme (15½ grs.) each. Dust them with lycopodium until they cease to be adhesive. Then roll them in subcarbonate of iron and finally cover them with a varnish composed of

Balsam of tolu	20 grammes.
Mastic	5 "
Ether	50 "

which is sufficient to cover 3,000 boluses.—*El Restaurador Farmac.* fr. *L'Union Pharm.*

Tournié's Pills.—

Tannin	2 grammes.
Digitalis, powdered	1 "
Extract of Cinchona	q. s.

Make 20 pills. One to be taken at night. For night-sweats in phthisis.

Dr. Radcliff's Great Remedy, Seven Seals or Golden Wonder.—According to prospectus this is good for cholera morbus, dysentery, diarrhœa, burns, sprains, rheumatism, warts, corns, and all diseases. In a quadrangular bottle Hager has found about 95 grammes of a brownish-orange clear fluid, which is a spirituous tincture of cayenne pepper mixed with ether, chloroform, American oil of peppermint, and a little camphor. The proportion of these ingredients is, approximately, 4 grammes of ether, 6 grammes of chloroform, 4 grammes of camphor or camphoraceous oil, 2 grammes of oil of peppermint, 35 grammes of tincture of capsicum, and 50 grammes of 90 per cent alcohol.

Bronzing Liquid.—Dissolve 10 parts of fuchsine and 5 parts of aniline-purple in 100 parts of 95% alcohol on a water-bath; after solution has taken place, add 5 parts of benzoic acid and keep the whole boiling for 5 or 10 minutes, until the green color of the mixture has given place to a fine light bronze-brown. This liquid may be applied to all metals, as well as many other substances, yields a very brilliant coating, and dries quickly. It is applied with a brush.—*Pharm. Centralh.*, No. 44, fr. *Chem. Zeit.*

Glacialin is a mixture of 18 parts of boracic acid, 9 of borax, 9 of glycerin, and 6 of water, dissolved in water. It is patented in England by Grier, and is used for preserving meat.—*Ph. Centralh.*

Removal of Fusel Oil and Clarifying of Liquors.—New liquors may be completely freed from fusel oil, and at the same time be thoroughly clarified by adding for every 17 pints of the liquor a powder consisting of 1 oz. of pure starch, 5 oz. of prepared egg-albumen (in fine powder), and ½ oz. of sugar of milk.

To render Boots and Shoes Impervious to Wet.—Dr. Parkes gives the following formula: Take half a pound of shoemaker's dubbing, half a pint of linseed oil, half a pint of solution of india-rubber. Dissolve with gentle heat (it is very inflammable) and rub on the boots. It is well to renew the application every three months.

Ozokerine.—Ozokerine, lately introduced to the trade in England, is a product of ozokerite or earth-wax, by a process which removes all smell and taste. It is said to contribute a good basis for ointments, being emollient and antiseptic. It has the color of fine almond oil, is said to form a valuable dressing for wounds, and is in every respect preferable to lard as an oinment basis.—*Oil Paint and Drug Rep.*

NOTES, QUERIES AND ANSWERS.

[*Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us as come within the scope of this journal, provided they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue.*]

No. 487.—**Salicylic Acid and Cider** (C. G. D., Cleveland, O.).

This correspondent states that salicylic acid added to filtered cider causes a light-colored precipitate after standing several days; and he asks what is the nature of the deposit.—The investigations of Professor L. Roesler and others have shown that it requires a very considerable amount of salicylic acid to entirely suppress and prevent the further fermentation of wines, musts, etc., which are only partially fermented. According to the nature of the liquid, from 50 to 100 grammes per 100 litres are required. If only a small amount of the acid is added, certain conditions may arise, when the liquid begins to "work" again. The result is the production of insoluble flocks and deposits, consisting, probably altogether or nearly so, of nitrogenized bodies, which are not exactly known. Cider, like wine-must, contains also phosphates, which interfere with the action of the acid, as the latter combines with them, and therefore ceases to be free. This drawback has been overcome by Professor Kolbe, who recommends to add to the liquid equal parts of salicylic acid and of acid potassium sulphate (bisulphate of potassium); the latter salt, namely, by virtue of its excess of acid, neutralizes or combines with the phosphates, and therefore retains the salicylic acid in a free state.

We do not know whether it is customary to subject cider to Pasteur's process, technically termed "pasteurization," but we suspect that this would prove very advantageous. This process consists in heating the liquid to a temperature of 65° C. (=149° F.), whereby the albuminoid bodies are coagulated and the ferment-cells are entirely destroyed. Such "pasteurized" liquids may be preserved with a very minute quantity of salicylic acid, and in many cases without the addition of any antifermentent. From reports in our possession, it appears that the addition of 0.1 gramme (1.6 grain) each of salicylic acid and acid potassium sulphate is considered sufficient for ¾ litres (about 23 fl. oz.) of such liquids.

No. 489.—**Nigrosine** (J. S. M., Saco, Me.).

This is a variety of aniline-black, or rather very dark-blue aniline, soluble in water with a black color. We expect some information on the various grades of this substance and their preparation from one of our correspondents abroad, which we shall communicate in a future issue. The price here is about $2.75 per pound.

No. 490.—**Aniline Oil** (Same).

This is the commercial aniline or crude aniline, which is a mixture of pure aniline ($C_6H_5NH_2$), toluidine ($C_7H_7NH_2$), and pseudo-toluidine ($C_7H_7NH_2$). It is prepared by pouring upon 200 parts of iron-filings or turnings, contained in an iron retort, 10 parts of acetic acid and 10 parts of nitrobenzole. As soon as the first violent reaction is over, 90 parts more of nitrobenzole are run in in a thin stream; the whole is heated with steam and kept stirred by machinery. The retort is at the same time connected with a closed reflux-condenser, so that there is considerable pressure produced within the apparatus. The volatilized products flow back into the retort, and the reaction is finished, when, on trying a sample, it is found to be completely soluble in hydrochloric acid. The crude aniline is then distilled over by means of superheated steam. The price of crude aniline is about 50 cents a pound, and less for larger quantities.

No. 493.—**Prescription-Query** (J. H., Boston, Mass.). Our correspondent says:

In compounding the following prescription:

℞ Hydrarg. chlor. corros..... gr. ij.
Potass. iodid..... ℥ ss.
Aquæ destillatæ ..... ℥ viij.

a precipitate is produced, on adding the iodide to the corrosive sublimate, which must be red iodide of mercury. Would it be proper to filter it, or should liquor potassæ or carbonate of pot. be added, until it is dissolved? If potassa is added, should the solution be slightly colored, or perfectly colorless?—We have no answer to make to the latter portions of this query, because the first proposition is wrong. If our correspondent will dissolve 2 grains of corrosive sublimate in 4 fl. oz. of water, and ½ drachm of iodide of potassium in another 4 fl. oz. of water, and if he adds gradually the latter solution to the former, he will find that it takes less than 1 fl. oz. of the iodide of potassium solution to redissolve the red iodide of mercury first formed, and to make a clear, colorless mixture. The addition of more iodide solution, of course, produces no further change. We suspect that the sublimate and iodide were put into the bottle in lumps and the water added. Under these circumstances, the lumps of both salts are coated with insoluble red iodide, and as there is not yet enough iodide of potassium in solution to redissolve the coating, it requires considerable time and shaking to produce a clear, colorless solution.

No. 494.—**Formulæ for Elixirs, etc.** (Subscriber).

The formulæ for elixirs, syrups, etc., reported to the American Pharmaceutical Association by the various Committees on Non-officinal Formulæ since their first organization, have never been published in a separate pamphlet. They are to be found in the *Proceedings* of the different years, as well as in the various pharmaceutical journals. Our own files for several years past have contained a number of them from time to time. We shall during the next year continue to publish such formulæ, giving the preference to those which are in more frequent demand.

No. 495.—**Ricketts' Notes on Assaying** (C. G. D.).

The title of this book is: Notes on Assaying and Assay Schemes; by Pierre de Peister Ricketts, E.M., Ph.D., Instructor in Charge of Assay Laboratory of the School of Mines, Columbia College. New York: The Art Printing Establishment, 30 Bond St. 1876. It is out of print, but a new edition will soon be issued and may be had from J. Wiley & Co., New York.

No. 496.—**Hufeland's Catarrh-Elixir** (B. V. M., Detroit, Mich.). This is the formula:

Ex r. cardui benedicti..... ʒ i.
" dulcamaræ..... ʒ i.
Solve in
Aquæ fœniculi..... fl. ℥ i.
Adde
Aquæ laurocerasi ..... fl. ʒ i.
M. S. 1 fluid drachm 4 times daily.

No. 497.—**Corn Plasters and Solvents** (W.).

Besides the mechanical corn plasters which are generally of a circular shape with a central hole, intended to keep off the pressure of the shoe or boot, there are some real applications recommended, which are more or less able to soften and to gradually destroy the corn itself. Cooley mentions the following:

1. Carbonate of potassium, or pearl ash, contained in an open jar or bottle set in a damp place, until it deliquesces into an oil-like liquid (oil of tartar). Applied by means of a feather (or camel's hair brush); or a small piece of rag dipped in it is bound on the corn.

2. Hydrate of potassium (caustic potassa), 1 ʒ; alcohol 1 fl ℥. Used as No. 1.

3. A pinch of dry carbonate of potassium, either alone or colored with smalts, ochre, or bole is placed on the corn and confined by means of a adhesive plaster or rag.

4. Carbonate of sodium dry, 1 ℥, finely powdered and mixed with lard, ½ ℥. Applied on linen rag every night.

5. (Sir H. Davy's). Carbonate of potassium, 2 parts, potassium oxalate (salt of sorrel), 1 part. Powder them fine, mix them, and place a small quantity on the corn for four or five successive nights, binding it on with a rag.

Caution: Care must be taken, in all cases, to pare the corn moderately close before applying the remedy, *but in no case should any of the above be applied to a raw surface.*

No. 498.—**Kalsomine** (S. Carlisle, Pa.).

Kalsomine is made by mixing zinc white with water and glue sizing. The glue should be soaked in water for about 12 hours, or over night; then it should be dissolved by heating over a fire. Sometimes Paris white is substituted for zinc white, but it does not answer so well. The proper proportions are ½ lb. of glue to 15 lbs. of zinc white for ceiling, and 1 lb. of glue to 15 lbs. of zinc white for walls. Color may be imparted to the kalsomine by mixing it with any water color, or dry color ground with water. To obtain the proper tint, it is necessary to make a trial on a small scale, as the color, when dry on the wall, often differs considerably from the color of the liquid kalsomine.

No. 499.—**Soluble Bougies** (R. S. K., Pa.).

These are made by melting gelatine, with the addition of water and a small quantity of glycerin, together with any desired remedial agent soluble in water, such as sulphate of zinc, sulphate of copper, etc., and casting the mass while hot into moulds. There is no difficulty in preparing them, provided the necessary care is taken in preventing the retention of air-bubbles in the mass. The liquid must be poured into the moulds quite hot and in as thin a stream as possible. We are told that some makers use pressure in addition, but we do not think this absolutely necessary.

No. 500.—**Crab Oil.** (J. B. & Co., Paterson, N. J.).

Crab or carap oil (from *Carapa guianensis*) is a sort of vegetable butter, being sometimes solid and sometimes half fluid, which is obtained from the seed of a large tree, abundant in the forests of Guiana, and also found in Trinidad. It is said to turn rancid very soon when exposed to the air, but this is probably caused by the presence of impurities, arising from the crude and imperfect way in which it is prepared by the natives, who boil the kernels, leave them in a heap for a few days, then skin them, and lastly reduce them to a paste in a wooden mortar, which is then spread on an inclined board, and exposed to the heat of the sun, so that the oil may melt and gradually trickle down into a vessel placed below to receive it. A prize was awarded for this oil at the London Exhibition in 1851.

Carap oil in Trinidad is highly esteemed as a pomade for the hair and also for applying to the wounds of animals, for destroying tick and other insects which infest cattle, also for the cure of rheumatism. An oil called carap oil is also obtained in the East, from the almonds of *Xylocarpus Granatum* or *Carapa Molluccensis*, Lanark, which is used by the natives to dress the hair and anoint the skins so as to keep off insects.

No. 501.—**Nordhausen Sulphuric Acid.** (J. W. S., Ithaca, N. Y.).

This substance, which is monohydrated sulphuric acid combined with one molecule of sulphuric anhydride (anhydrous sulphuric acid), has the composition:

$HO,2SO_3$ (old); or $H_2S_2O_7=H_2SO_4.SO_3$ (new).

Its name arises from the fact that it used to be made exclusively at Nordhausen in Prussia. Afterwards it was also made at several places in Saxony. But at the present time all these factories have ceased to exist; and it is now manufactured by an improved process in Bohemia in Stark's works. The introduction of sulphuric anhydride in an almost dry form into commerce has considerably diminished the demand for this article.

Santonin is said to be adulterated with boric acid. The test consists in ignition of the specimen, dissolving the residue in boiling water, allowing it to crystallize, when boric acid separates and is recognized in the usual manner.

LIST OF QUERIES.

THE following is a list of queries, so far as it has been completed, to be answered at the meeting of the American Pharmaceutical Association at Indianapolis, in September, 1879.

QUERY 1. The resin of Leptandra Virginica (the leptandrin of commerce) varies much in appearance and sensible properties. To what causes are these varying results to be attributed? What is the best process for the preparation of the resin, and what is the average yield of the root?

Accepted by *J. U. Lloyd*, Cincinnati, O.

QUERY 2. Would the substitution of citrate of sodium for citrate of ammonium in the officinal pyrophosphate of iron make the latter less liable to become insoluble on keeping?

Continued to *G. F. H. Markoe*, Boston, Mass.

QUERY 3. Are there any drugs now successfully cultivated here which were formerly obtained from foreign countries?

Continued to *H. S. Wellcome*, New York.

QUERY 4. What is oil of cedar of commerce? Where and from what plant or plants is it made, and what is it used for?

Continued to *J. H. Stein*, Reading, Pa.

QUERY 5. An essay on the conditions necessary to successfully conduct percolation.

Continued to *J. U. Lloyd*, Cincinnati, O.

QUERY 6. How do Rio and East India tapioca compare in dietetic value?

Continued to *William J. Jenks*, Philadelphia, Pa.

QUERY 7. The preservative properties of boracic, benzoic, and salicylic acids have lately attracted considerable attention. What are their respective values as preservatives, and which is best adapted to the uses of the pharmacist? If possible, give a ready method for their use.

Continued to *S. P. Sharples*, Boston.

QUERY 8. What are the comparative values of benzoin and styrax for preserving ointments, etc., from rancidity and decomposition?

Continued to *J. J. Grahame*, Philadelphia, Pa.

QUERY 9. The quantity of acetic acid in the formula for the preparation of acetic extract of colchicum (U. S. P., 1870) is directed to be four fluid ounces to twelve troy ounces of drug. Is not this quantity unnecessarily large, and cannot less be used without interfering with the stability of the preparation? Also, can the formula be altered in regard to its menstruum, by using alcohol, with any advantage?

Continued to *J. J. Grahame*, Philadelphia, Pa.

QUERY 10. On the condition of the mercurial constituents in the several pulverulent preparations as recommended to be prepared with sugar of milk. (See Am. Jour. Pharm., 1876, p. 267.)

Continued to *P. W. Bedford*, New York.

QUERY 11. Solvents for wax, paraffin, stearine, ceresin, as a test for adulteration of wax.

Continued to *P. W. Bedford*, New York.

QUERY 12. Report on the brands of white wax in market.

Continued to *P. W. Bedford*, New York.

QUERY 13. An essay on the use of citric acid and other preservative agents in syrup of iodide of iron.

Continued to *P. W. Bedford*, New York.

QUERY 14. Can salicin be economically made in North America and by what process?

Continued to *E. Gregory*, Lindsay, Ont.

QUERY 15. What is the therapeutic value of dialyzed iron as an antidote for arsenious acid, as compared with the hydrated ferric oxide?

Continued to *Adolph Tscheppe*, New York.

QUERY 16. Can any of the decoctions or infusions of the U. S. P. be satisfactorily prepared from the fluid extracts of the U. S. P., and in what particular do they differ from infusions and decoctions prepared in the prescribed manner?

Accepted by *Wm. Saunders*, London, Ont.

QUERY 17. To what extent do the pills of the U. S. P. supply the demand for ready-made pills? Are there any formulas which, if introduced, would add to the value of the list?

Continued to *R. V. Mattison*, Philadelphia, Pa.

QUERY 18. An essay on Gelsemium sempervirens, embracing the question as to what principle its activity is due, and whether the green root possesses any advantages over the dry.

Accepted by *G. J. Luhn*, Charleston, S. C.

QUERY 19. Nearly all the lactic acid in use in this country is manufactured abroad. Cannot this acid be made as well and as cheaply in this country? Give a formula for its preparation.

Accepted by *P. J. Schumann*, Atlanta, Ga.

QUERY 20. Eroudictyon Californicum is receiving attention for its action in lung diseases and bronchial affections. What is its therapeutical value, and to what is its activity due? Make a chemical examination of it.

Accepted by *Charles Mohr*, Mobile, Ala.

QUERY 21. Does Erigeron Canadense possess any medicinal properties after the volatile oil has been removed from it by distillation or by treatment with petroleum benzine?

Accepted by *F. Marion Murray*, Philadelphia.

QUERY 22. Are the medicinal qualities of Cannabis Americana such as to warrant its place in the primary list of the U. S. P.?

Accepted by *H. P. Tarrant*, Augusta, Ga.

QUERY 23. What is the therapeutical value of ergot from corn?

Accepted by *Norman F. Kuhn*, Salem, O.

QUERY 24. What is the source of supply of spigelia? Does it come from the Spigelia Marilandica or from other plants?

Accepted by *R. H. Land*, Augusta, Ga.

QUERY 25. An examination of the residuum liquid from Hydrastis Canadensis, from which berberine has been separated, with a view to establish the identity of the acid with which the alkaloids are naturally combined.

Accepted by *Emil L. Boerner*, Iowa City, Ia.

QUERY 26. Should not the fluid extract and syrup of senekæ be prepared with an alkaline menstruum?

Accepted by *Geo. W. Kennedy*, Pottsville, Pa.

QUERY 27. Desired the best excipient for pills, bearing in mind the necessity for a permanently soft, pliable mass and solubility in the stomach.

Accepted by *F. Marion Murray*, Philadelphia.

QUERY 28. Aromatic spirits of ammonia has been proposed as a menstruum for exhausting lupulin. Has this any advantage over alcohol?

Accepted by *C. T. George*, Harrisburg, Pa.

QUERY 29. On dissolving solids in water or in other liquids, a change of bulk is generally produced, consisting in nearly every case of an increase of volume. It is desired to work out a table of the changes of bulk produced by dissolving definite quantities of officinal solids in definite quantities of menstrua.

Accepted by *P. C. Candidus*, Mobile, Ala.

QUERY 30. What is the best process for preparing powdered extracts? Report on the feasibility of preparing them of a definite strength by evaporating the fluid extracts on milk-sugar. Give practical working formulas.

Accepted by *C. T. George*, Harrisburg, Pa.

Greek Sponge Fishery.—The *Athens Messenger* states that the value of the sponge fishery in Greece has risen from 20,000f. in 1870 to 2,000,000f. in 1877. The trade employs above 120 vessels, manned by 800 men. Each boat goes out four times a year, and obtains 100 kilogrammes of sponge, at a mean value of 30,000f. The preparation of the sponges is very simple and inexpensive. They are first dried in the sun, and then separated into two different qualities, the average price of the first quality being 35f. or 40f. the kilogramme.

ITEMS.

College of Pharmacy of the City of New York.—On the evening of December 10th, the College of Pharmacy had a "Celebration in Commemoration of the Acquisition (to quote the programme in use on that occasion) of the College Building." Addresses were made by President McIntyre, Professors Chandler and Bedford, and Messrs. Olliffe, Baluff, and Menninger, to a large and appreciative audience. Music by an orchestra under the leadership of Mr. O. B. Weber interspersed the speaking, and following the addresses the building was inspected, and the officers of the College received the congratulations of their numerous friends.

Referring to the early history of the school, Professor Chandler mentioned the fact that lectures were first delivered in the old College of Physicians and Surgeons in Crosby st., and that the pharmaceutical lectures were at one time given in one of the rooms of the City Hall. He also remarked that the influence of this Association upon the City Fathers had been manifested on subsequent occasions: as, for example, when it was proposed to sprinkle the streets of the city with a solution of chloride of calcium, when some of the aldermen, mistaking this for chloride of lime, had urged that the value of the measure as a disinfectant would be an additional recommendation to the one mentioned by the mover of the project, viz.: that the calcium chloride would retard evaporation of the water and obviate the necessity of frequent sprinkling. Other instances were the application of a "poultice" pavement to the whole length of Fifth Avenue a few years ago, and the frequent recurrence of the odor of *spiritus frumenti* which was reported to have been observed in the halls of the building itself.

Profeseor Bedford gave a series of biographical sketches of the various professors who had, from time to time, been connected with the College, many of whom he had the good fortune to know personally.

In the course of his address, Professor Chandler expressed the hope that, before long, the College would, through the help of its funds, be possessed of a complete pharmaceutical library, which would be accessible at all hours of the day and night to those who wished to consult it, and a museum which would contain everything of interest to pharmacists.

Professor Bedford likewise put in the plea for the necessity of having a thoroughly equipped pharmaceutical laboratory, in which this essential branch could be taught in the same manner that is now pursued in the case of chemistry.

Alumni Association of the College of Pharmacy of the City of New York.—The next quarterly meeting of the above Association will be held at the College Building, 209, 211 E. 23d St., on Wednesday, Jan. 8th, 1879, at 8 P.M. A full attendance is requested.

H. L. COIT, *Secretary.*

Formic acid has, it is said, been found recently to possess powerful preservative properties, surpassing, when added to acid solutions, even carbolic acid; it is stated to be particularly suitable for adding to fruit juices. From one-fourth to one-half per cent is the quantity requisite to preserve vinegar, fruit juices, glue, ink, and the like.

Wine Analysis.—Mr. Teisserenc de Bort has just charged the Agronomic Institute to make a chemical analysis of all the wines sent to the Paris exhibition. The number of samples to be examined is more than 10.000, coming from France, Spain, Italy, Austria, America, Africa, Australia, etc.

John Lomas & Co.—The telegraph announces the failure of John Lomas & Co., chemical manufacturers at Farron-on-Tyne with a paid-up capital of $500,000. Assets valued at 25 per cent. Considerable anxiety is said to have been caused by the failure in the Tyne chemical trade, which is just now in an exceedingly depressed condition.

William R. Warner & Co. have established an office on the N. E. corner of John and Nassau Sts, in New York, as a branch of their home office and laboratory at 1228 Chestnut St., Philadelphia, and have commenced the bi-weekly publication of an extended price-list of the articles manufactured by them, under the title of the Pharmaceutical Bulletin. Mr. P. R. Lance will have charge of the branch office, and Mr. Warner will also be present on Thursdays from 10 A.M. to 4 P.M., for attention to matters requiring a personal interview.

A New White Paint.—After some ten years of laborious and costly experiments, Mr. T. Griffiths, of Liverpool, has succeeded in producing a new mineral white by the aid of sulphide of zinc which entirely eclipses white lead and the old zinc white (oxide of zinc), by having much more "body" or covering power and more permanent qualities than either of these, and, moreover, not being of a poisonous nature like white lead, does not affect the health of those who manufacture or those who use it. The white sulphide of zinc is precipitated, washed, calcined, levigated, and dried, the product being the most perfect white pigment hitherto obtained.

CALENDAR FOR JANUARY.

Day of Week.	Day of Month.	Society Meetings.
Thursday	Jan. 2.	Louisville Coll. of Pharm.—Pharmaceutical Meeting.
"	" 2.	Phil. Coll. of Pharm.—Social Meeting of Executive Board of Alumni Assn., and awarding of Prize for the most complete collection of botanical specimens gathered during the summer.
"	" 2.	New York Coll. of Pharmacy.—Monthly Meeting of Trustees.
Tuesday	" 7.	Pittsburgh Coll. of Pharm.—Monthly Meeting of Board of Trustees.
Wednesday	" 8.	Cin. Coll. of Pharm.—Quarterly business meeting and annual election of officers.
Thursday	" 9.	Newark Pharm. Assn.—Monthly Meeting at 3 P.M., in room 4, Library Building.
"	" 9.	Maryland Coll. of Pharm.—Stated Meeting.
"	" 9.	Louisville Coll. of Pharm.—Monthly Meeting of Board of Directors.
Friday	" 10.	Phil. Coll. of Pharm.—Alumni Assn.
"	" 10.	N. Y. Coll. of Pharm.—Quarterly Meeting of Alumni Assn., and of the Executive Board of the Coll.
Monday	" 13.	Rhode Island Pharm. Assn.—Annual meeting at the rooms of the Providence Franklin Soc., 27 North Main St., Providence, R. I.
Tuesday	" 14.	Chicago Coll. of Pharm.—Monthly Meeting of Trustees.
Thursday	" 16.	Literary and Scientific Society of German Apothecaries of New York City.—Annual election of officers at their rooms, 160 Third Avenue.
"	" 16.	N. Y. Coll. of Pharm.—Quarterly meeting of College.
Tuesday	" 21.	Kings Co. Pharm. Soc., 120 Myrtle Avenue, Brooklyn.—Stated Meeting.
"	" 21.	Pittsburgh Coll. of Pharm.—Pharmaceutical Meeting.

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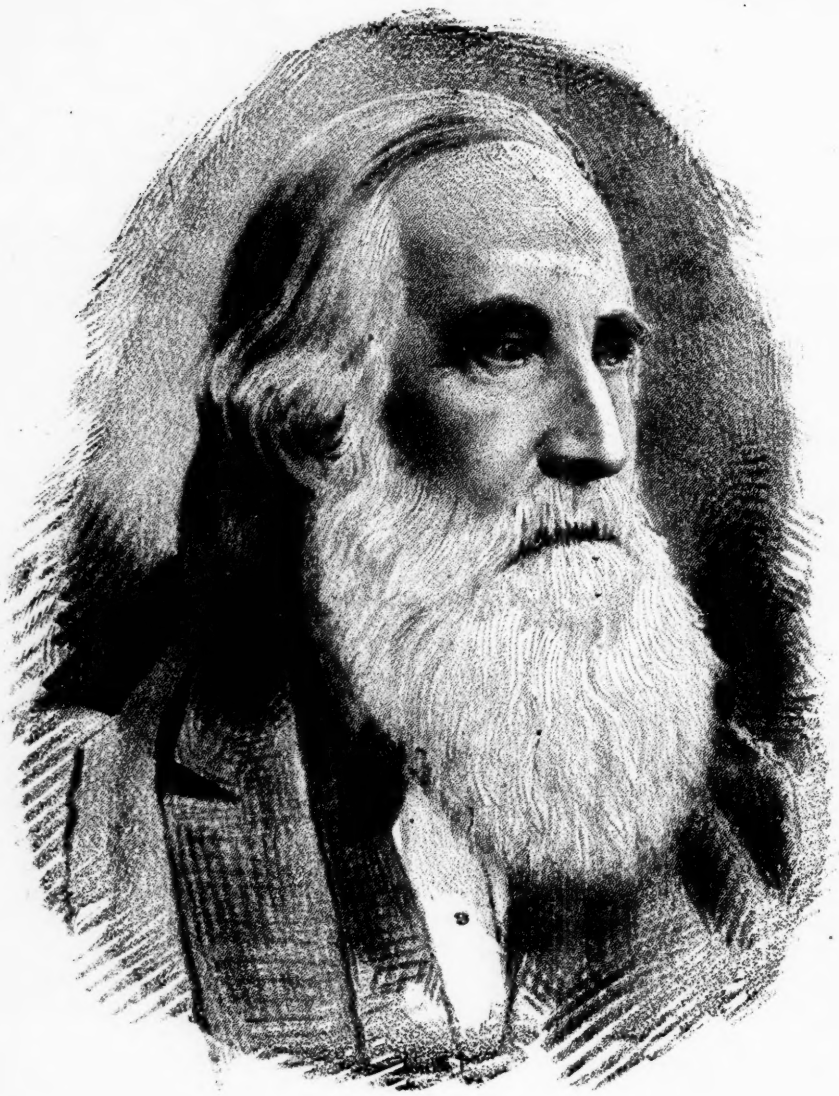
Supplement to
"New Remedies," an Illustrated Monthly Trade Journal.
New York, February, 1879.



Professor ALFRED STILLÉ, M.D.,

of the University of Pennsylvania.